[Gruen + Gruen Associates, San Francisco?]
Economic + social analysis of three Oakland BART station areas: MacArthur, Rockridge, Fruitvale

(1973)

Gruen Gruen + Associates

ECONOMIC AND SOCIAL ANALYSIS OF THREE OAKLAND BART STATION AREAS

MACARTHUR ROCKRIDGE FRUITVALE

A Report to the City of Oakland
Prepared by Gruen Gruen + Associates

July, 1973

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While this study would not have been possible without the contributions of those named and numerous others not named, Gruen Gruen + Associates takes sole responsibility for the analysis and conclusions contained herein.

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CHAPTER [illegible]

A Framework for Analyzing the Effects of The New BART System

NEED FOR AND SOURCE OF THIS FRAMEWORK

The operation of the Bay Area Rapid Transit District's 75 mile rapid rail network with high speed electric trains serving 33 regional stations in 15 communities will impact many aspects of the Bay Area's environment. These impacts will interact with diverse and complex pre-existing economic and social forces. Some of these interactions will not work out to affect any changes in future land use patterns or socio-economic conditions. As Professor Vincent Roggeveen pointed out in a conference on BART impacts, sometimes nothing has happened around some rapid transit stations of systems that "have been operating for 50 to 60 years".[1] Many other interactions will cause very significant changes in land use development potentials and socio-economic conditions. The research summarized in this report was conducted in order to provide information needed to predict the land use potential and other socio-economic changes that would occur around three Oakland BART stations with and without concomitant changes in City policy and actions.

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[1] Vincent Roggeveen, Impacts of the Bay Area Rapid Transit System on the San Francisco Metropolitan Region, Highway Research Board Special Report 111, Proceedings of a Workshop Conference, Highway Research Board, Washington, D.C., 1970, p. 52.

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CHAPTER I

A Framework for Analyzing the Effects of The New BART System

THE NEED FOR AND SOURCE OF THIS FRAMEWORK

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Our assignment was to forecast the impacts that could be expected to develop in the early years of BART's operation during which time some changes will occur in the factors that determine the economic potential of the station areas. The three Oakland station areas considered include the areas

[1]Vincent Roggeveen, Impacts of the Bay Area Rapid Transit System on the San Francisco Metropolitan Region, Highway Research Board Special Report III, Proceedings of a Workshop Conference, Highway Research Board, Washington, D.C., 1970, p. 51.

surrounding the MacArthur Station located between 40th Street, Telegraph Avenue and West MacArthur Boulevard, the Rockridge Station on College Avenue between Miles Avenue and Keith Avenue and the Fruitvale Station at East 12th Street and 35th Avenue. In each case, the study area included that area defined as being the area of direct impact and influence. Chapters IV, V and VI present a detailed analysis of the particular residential, commercial and industrial areas considered in each case.

The permutations and combinations of possible effects that could result from the interaction of BART's many impacts and the many facets of the particular socio-economic conditions that now exist in the study areas around the three Oakland stations are infinite. To be efficient, the research program had to be designed in order to identify the types of impacts and pre-existing conditions that would interact to cause significant changes in land use development potentials and future socio-economic conditions. In order to conduct this analysis, a framework was needed to provide a filter or focus that would pinpoint the type of information the research would seek -- to cut down the number of questions we would need to ask by first hypothesizing the type of answer that would be important.

Fortunately, such a framework can be sketched out by drawing from the available tools provided by urban economic theory and empirical experiences of other transportation systems. It is important to point out, here, that we did not assume it was worthwhile to study the effects of other urban transportation systems in order to develop analogies that could be used to make predictions about the effect of BART and concommitant alternative public policies around the three Oakland stations we were assigned to study. Predictions based on such comparisons would be either spurious or inefficient. The specific impacts and forces that work on and exist in the three Oakland stations are likely to differ significantly from the interactive impacts and forces that worked out their effects around the

stations of other systems. To draw conclusions from comparisons that ignore these differences would be erroneous. To comprehensively study the impacts and forces that work on the three stations with which we are primarily concerned <u>and</u> those that worked on the stations of other systems would be a massive task.

Therefore, we considered the experience of other transportation systems not as a comparative base upon which to predict the effect of the new BART stations, but as a source to develop a framework that would suggest the type of impacts and forces we should be looking for in order to predict significant primary effects. In presenting this framework we also make references to historical evidence that provides an empirical basis for believing that the theoretical framework we are presenting is an accurate replication of the systematic effects that can be expected to influence social and land use changes.

THE DIRECT IMPACTS OF THE BART STATION

The system-wide and localized effects of land-based transportation systems have been generated by the following kind of direct impacts:

<u>A Reduction in Space Impedance</u>

The most dramatic and large-scale effects of new transportation systems have resulted from the impact that such systems have on the time/space relationships that confront would-be travelers in the area. Typically, the amount of time required to cover the space traversed by the system has been reduced. When the new systems have become widely adopted, that is when they impacted sizeable amounts of urban space, the change in time/space relationships worked to cause major changes in land use patterns. The brief review of the history of urban development highlights this relationship between changes in the trans-

portation system and the pattern of urban development and land use. In essence, the impacts which effect change are those that either meet little resistance from pre-existing social and land use forces or those that work with them toward the same end.

Prior to the mid 1800's most urban space was traversed by carriage or shanks' mare. The time impedance created by these slow modes of travel gave us extremely concentrated cities. Our cities avoided the extreme crowding and congestion of Nero's Rome only because we were primarily a rural nation. Immigrants passed through our cities and went on to work opportunities outside the cities. The lesson here is not just that slow transportation systems tend to encourage concentrated development; it is also that transportation itself is only an intermediary service that will neither stop nor encourage urban growth in the absence of other factors

By the mid 1800's most urban space was beginning to demand urban mercantile services. San Francisco became a warehouse and distribution point where growth was spurred by the Gold Rush. Oakland came to be tied to the City of San Francisco by a ferry terminal that encouraged an inward push of land use in the second half of the 19th century as people could travel on daily steamboats. The first ferries reached the East Bay at the foot of Broadway on the Oakland estuary in 1852. In 1863, the Oakland pier was built and service speeded up.[2] By 1870, Oakland had a population of 10,500 and Alameda 1,557, the ferry trip taking from twenty to thirty minutes. In the 1870's street-running railroad lines made Alameda and East Oakland potential sites for residential development. In 1870,

[2] James E. Vance, Jr., Geography and Urban Evolution in the San Francisco Bay Area, Institute of Governmental Studies University of California, Berkeley, 1964, pp. 44, 45.

Oakland also had a cable car line built along Broadway. But like the rest of the country where horsecars and rail lines were the main mode, development concentrated near the source of slow moving cable or horse drawn trolley lines usually located near the railroad stations and ferry terminals. As Homer Hoyt wrote in his well-researched work, "The Structure and Growth of Residential Neighborhoods in American Cities":

> Central growth is the result of forms of transportation that tend to be of approximately equal speed from the center of the city in all directions toward the periphery. It is not a question of absolute but of relative speed...there is a limit to the extension of settle areas along radial lines. After a certain point is reached, it is found that the time consumed in going to the most distant points on these radial lines is greater than the time required to take a slower crosstown line and to transfer to the main radial line at a point closer to the center of the city.[3]

Those who studied the pattern of developments in American cities that were largely built up prior to 1890 tended to think in terms of the concentric circle theory of development with the oldest and cheapest housing tending to be in the center and the newer and more desirable units on the periphery.

But in 1887, an electric traction motor developed by Frank Sprague permitted the development of a new and faster intra-urban transportation technology. As James E. Vance has pointed out, the electric trolley permitted the decongestion of our cities. Its impact had such a great effect because it came at a time when Oakland and many other cities were becoming booming manufacturing centers. The cities, not the farms, became the place where economic opportunity existed.

[3] Homer Hoyt, The Structure and Growth of Residential Neighborhoods in American Cities, Federal Housing Administration, Washington, D.C., 1939, p. 101.

Factories replaced the housing that stood near the ferry terminals. These factories could obtain materials brought to them by rail and ship; they obtained labor brought to them by the rapidly expanding trolley and electrified rail lines. No longer was it necessary for all but those who could afford carriages to live in the increasingly congested areas around work and shopping places.

The East Bay had more trolley lines than the rail-served Peninsula and Marin County. This was one of the reasons that the East Bay added about 400,000 people between 1900 and 1930 while Marin and the Peninsula added only about 75,000 people during that period.

Oakland and the other East Bay communities were not the only ones to have their growth patterns influenced by the electric rail lines of the period. The final result of this technology was the devlopment of the Key System network that is partially paralleled by the present BART system. In the United States there were 15,000 miles of electric car track by 1897 operated by 909 companies. By 1912, 40,808 miles of electric streetcar lines tied together American urban areas.[4]

The land use, economic and social effects of this technology were particularly great because they came during a period of great urban growth. Many of the narrow lot houses that constitute a significant part of Oakland's present housing stock were built in this period. Sometimes the developers were also promoters of the trolley lines that reduced the impedance of getting to the lots and buildings they sold. The commercial "strip development" shopping facilities that line the main streets near

[4] Blake McKelvey, <u>The Urbanization of America 1860-1915</u>, Rutgers University Press, New Brunswick, N.J., 1963.

the three stations we studied developed first during this time (College Avenue, Telegraph, Broadway and East 14th Street). Convenience retail businesses could operate well in small stores along the trolley lines and particularly, near the nexus of trolley lines.

The change in space/time opportunites that was brought about by the existence of the electric trolley networks can be seen most dramatically in their ability to avoid the type of congestion that would have occurred if this technology had not been available. The introduction of the automobile expanded this effect even further because its speed extended the commuter's potential range, and its ability to leave the arterial to go along side streets made the areas between main radial lines equally easy to reach. Manhattan provides a dramatic example of the effect these new technologies had on residential concentration. The population of Manhattan Island declined from 2.3 million in 1910 to 1.7 million in 1960.

Thus, the impact that had the most discernible effect during this period was the shrinkage of distance to raw land, a phenomenon that permitted the use of vacant land to house city workers. But even here, the effect was obviously tempered by more than just the reduction of impedance to vacant land during a period of urban growth. As Homer Hoyt, the economist who first postulated the sector theory of urban growth wrote, "Of course urban growth may extend in one direction in terms of time consumed in travel because of the superior attraction of one section of the city, or because of customary routes of travel."[5] In other words, even when the forces that promote urban residential growth are present, they will not be channeled merely by the impact of the transportation technology. Instead, pre-existing

[5] Homer Hoyt, op. cit.

social and physical factors continue to work, but within the new time/space relationships. The transportation impact that alters the relative time it takes to get to alternative urban sites works in conjunction with the impacts on the social and physical terrain in order to affect whatever residential land use changes occur.

Historical changes in the development paths of commercial and industrial land use patterns were influenced by the residential land use changes that occurred, as well as by the direct impact upon travel opportunities to alternate commercial and industrial sites that were wrought by the impact of the new mode on the time and space trade-offs that always exist. Until the effect of the automobile and highway technology that was introduced around 1917 began to work with the increasing affluence of the post World War II period, most major retail facilities required a center city location for survival. In order to carry the depth and quality of inventory that gives a retail facility dominant status, its sales must be relatively high. To achieve high sales, a store needs a large and relatively rich customer base. But there is a trade-off between the wealth and size of the required customer base. The richer the store's client base, the fewer number of people need be in it; while if the client base is large enough, the store may be equally well off with people of lower incomes.

In the pre-automobile era, major retailing agglomerations were found only in the centers of the residential concentrations that grew out from the waterway or railroad depot around which the city developed. The automobile permitted this concentration to move out father because cars traveling over highways move at several times the speed of electric street cars. The auto also raised the potential for axial growth away from the main radial arterial highway. This potential fit well with the social life style pattern of the post World War II era that favored the single family house and relatively large family and that included

a movement of some of the rural poor into the central cities. Thus, the pattern of residential spread to suburban areas that was noticeable in the 20's and 30's became dominant in the 50's and 60's.

However, major shopping centers away from the old centers did not begin to appear in noticeable amounts until after World War II. Their arrival had to await both the spread of population and the growth of affluence. Thus, again, the impact of the transportation-induced change in residential patterns and decrease in the time required to reach alternate shopping sites did not cause change in land use patterns until they could mesh with the force of rising incomes. It was only when these transport impacts put relatively many people in a position to reach suburban shopping centers <u>and</u> incomes rose so that major department stores did not need to serve all the customers in an urban area that the present pattern of major regional suburban shopping centers became a reality. Non-retailing commercial agglomerations followed the retail development for the same set of reasons. However, it should be noted that highly specialized retail and commercial services that must attract from and deal with people from the entire urban area continue to prefer center city locations.

The auto also provides us with an example of the effect that the time impedance impact worked on convenience retailers and those services that can be supported by a relatively small or "neighborhood" market. As mentioned before, the land uses from which these activities were conducted had previously been located along trolley lines and particularly at the intersection of trolley lines. The auto's ability to travel the side streets as well as the main radial arterial did reduce the time that it would take shoppers to reach stores and offices off the main road. But while it is certainly true that many neighborhood and community centers have developed, most of these have been built in the suburbs where vacant land has been occupied by non-agricultural users only after World War II. In the previously

built up sections of the city, new developments frequently stayed along the older strips. One reason for this was the visual impact of both trolley and highway systems that will be discussed next. But another force that reacted against the impedance-lessening impact of the auto was the attraction that pre-existing commercial and retailing agglomerations had to new facilities. <u>Therefore, the impacts that affect change are thos that either meet little resistance from pre-existing social and land use forces or those that work with them toward the same en</u>

A review of the historical development of industrial land uses suggests that the previous generalization holds true for this use as well as residential and commercial uses. The industrial shift to suburban land uses has happened quickly because the travel time impact of the highway has interacted with several other impacts that all worked in the same direction. The truck' flexibility and low price freed the factory from total rail dependence for its material needs as the auto meant the labor force could come for farther away. At the same time, rapid technological change and traffic congestion in the older industrial sections pushed firms away from old structures and the city Again, however, a whole set of social and economic forces interacted to influence the type of new locations these industries selected.

<u>A Change in the Relative Advertising Value of Alternate Location</u>

A second impact of a new transportation system that tends to work most directly on commercial activities is the alternation in human traffic flows that works to alter the relative visual exposure of passers-by at alternate locations. The value of a store window or billboard increases directly with the number and disposable income of those who walk or ride by it. The locationa value of a window is greatest because it cannot only advertise to passers-by but also attract them into establishments. In other words, the window effect is achieved when large numbers of

people pass by a site by a mode that easily permits them to come into the establishment behind the window. The "100% location" in a town is one that attracts more people that are capable of coming in past its doors and windows than any other site.

The advertising value or billboard effect of the same number and type of people passing a site that they cannot go into is less than the value of a site they can reach. Nevertheless, both types of advertising values are important to commercial estab-ments. The trolley transport networks that preceded the auto-mobile dispensed a broad window effect since commuters could not only see the stores and offices along the trolley line, but they could easily get off the car and go in. Furthermore, trans-fer points occurred relatively frequently and at these points some increase in the window effect took place. Finally, the center of the city was clearly established at the point from which all lines radiated. The 100% location of the trolley car era had a much higher proportion of the total population passing by it than does today's 100% location.

The freeway and high speed rail systems are alike here in that they provide window-type advertising effects only at stations and off ramps even though they provide billboard possibilities along the way. The historic difference between the effects that resulted from a trolley or unlimited access radial street versus the limited access freeway and fixed rail high speed network are clear. While all of these provided a linear spread of billboard opportunities, the land use affecting window impact was spread out by the former and concentrated by the freeway and fixed rail.

Boundary Impacts

At any one point in time, residential neighborhoods do tend to attract people whose incomes and life styles are relatively

similar, that is, the variances in income and life style values that one finds within a neighborhood will be less than the variance one finds within the urban area as a whole. Historically, major transportation lines have frequently become boundaries that separate neighborhoods of different types. "Coming from the wrong side of the tracks" is more than an expression.

Alterations to the Physical Environment

Each of the various tranportation technologies have worked to alter the physical environment. The "exhaust" from horses polluted the streets of pre-1870 cities just as the exhaust from autos pollutes the air today. Noise and changes in the visual amenity level are other examples of impacts that transportation facilities do impose on the immediate areas they pass through. Perhaps one of the most dramatic effects of such impacts on land use potential through interaction with demand factors is presented by the example of Park Avenue in New York.

When steam railroad tracks ran along Park Avenue the noise and smoke made the area quite undesirable. Thus, when the train was electrified and put underground, the improvement in the physical environment was great. Fortunes were made by land speculators who had acquired the shanties that were previously all that could be rented along the tracks. With the train underground, it became possible to develop Park Avenue for high income housing.

Disruption Impacts

The act of building a capital intensive transport system such as a road or rail line can have a disruptive impact upon the previous pattern of activity in a local area. Some disruption is caused by the actual clearance and relocation of those who lived or worked in the cleared structures. Additional effects

are caused by an interruption in the pattern of activities that never gets completely re-established. In some cases establishments relocate and never move back into the area because of the inconvenience and loss of sales involved even if the disruption is temporary, and in other cases older owners may close their stores and not reopen because they are unable to absorb temporary losses and are too old to relocate and begin again. While few historical records of studies exist to provide examples of the effects wrought by such disruption, the need to consider the effect of this impact seems clear.

THE NATURE OF THE INTERACTIVE FORCES THAT WORK WITH BART IMPACTS TO AFFECT CHANGE

In addition to permitting us to catalogue the kinds of direct impacts that can be induced by a new transportation technology, the history of new systems in urban areas does permit us to draw the following generalizations about the effect of such impacts on the urban system:

1. In no cases do effects that result from the transportation systems' impacts stem purely or automatically from these impacts. Instead, such effects are always the result of the transportation impact altering one or more of the factors that maintain the present land use and socio-economic equilibrium so as to upset that equilibrium.

2. Dramatic change occurs in situations where the forces that resist changes are relatively weak and/or the impact on change-seeking forces is great. In the case of land uses, the forces that resist change are the costs of constructing new land uses or altering the condition of the present stock. The overall and localized demands for housing, commercial and industrial space are the "push factors" that can create the potential for change.

Examples of dramatic changes occurring where resistance is relatively weak are provided by land use changes that occur at the edges of an urban area when a new system alters the pre-

existing space impedance. Resistance to the creation of new houses, commercial facilities and plants is lowest on the vacant land at the edge of town because the builder of space merely has to pay for the land and construction costs; he does not have to pay the costs associated with demolishing existing structures after first paying for the captialized value of whatever income the older structures do bring in. Thus when a new transportation system reduces space impedance at a time when the growth of either the population or income generates a demand for new houses, commercial facilities or factories, the type of "urban sprawl" that has been associated with all new transport technologies since the 1850's rapidly appears. The expectation and the reality of this "opening up" of formerly agricultural land for uses that can outbid the farmer for acreage works to drive up land values at the edge of town. The BART system is already working to create this classic effect.

Commercial land uses provide the most graphic examples of transport impacts working to effect change because they facilitate or permit highly intense growth of demands that can overcome even fairly strong resistance. When trolley lines or major auto arterials crossed, the positive impact on retail demand was almost always enough to drive commercial rents to the point where it became profitable to tear down or at least remodel into commercial space any existing single family structure that stood near such a transport confluence. Of course the country's most dramatic example of transportation facilitating a demand that pushes for constant land use change is provided by New York City. Transport links permit two million people per day to travel into the nine squre miles that make up Manhattan's business district. Some 140,000 come in cars; 200,000 take buses; 100,000 ride the railroads and 1,400,000 take the subway.[6] The transport

[6] Plan for New York City, New York City Planning Commission, The M.I.T. Press, Cambridge, 1969, p. 48.

system that reduces impedance to permit this inpouring facilitates concentration. As New York's planners wrote, "The key to the city's national center function is concentration."

The national city function they refer to provides jobs that produce a very intensive demand for office space. The New York Planning Commission reports that between 1959 and 1969, Manhattan builders erected 195 major new office buildings that added 67 million square feet of office space to the city -- twice the total office space in the next nine largest American cities combined. Intensive demand made it profitable to tear down older high rise buildings for newer, taller skyscrapers. Land values soared in response to intensive demand, <u>the only source</u> of high land values.

The examples of center city and peripheral land use change represent the extremes of high demand and low resistance. The type of change that could affect the areas around the three Oakland stations we studied will not be so extreme. The resistance to change that exists in all three areas is not uniquely low -- very little vacant land exists. Furthermore, the types of demands that play themselves out around the three stations are not likely to be enormously altered by BART station impact. Therefore it is very unlikely that any very dramatic effects of the type discussed in the above examples will result. The impacts of the three BART stations will only work to make incremental changes, and in some cases the changes wrought will be slight. In all cases the important determinants will be the socio-economic conditions in the neighborhoods and not the city-wide demand pressures that BART channels to the neighborhoods.

The next chapter of this report sets up a general framework or model for measuring the resistance to change and predicting the amount of demand or push force that would have to be generated to overcome this resistance and cause land use change. The costs

of constructing and demolishing different kinds of space are relatively similar for all of Oakland, and thus this component of the "change resisting forces" can be presented once and considered in each separate analysis of the manner in which it will interact with other factors so as to maintain or upset the present equilibrium in the three study areas. The other component of resistance to change is the capitalized value of the existing structure. This value is itself, of course, dependent upon the existing and impacted demand forces. Therefore we had to study demand conditions not only to predict the direction and magnitude of these change-inducing conditions as they are impacted by the BART station, but also to predict the value of existing structures.

Two kinds of demands are impacted by a new transport system -- system-wide and local conditions. In this study we considered system-wide impacts only to the very limited extent that they set the general parameters for the demand potentials of any Oakland area. By system-wide effects we refer to changes in the overall productivity and resource-using capability of the region that might work to alter economic development and the growth and distribution of income. We did not consider these effects directly. Instead we worked with the City Planning Department to identify the path of locational changes for various kinds of business activities and housing market segments. Existing forecasts were utilized to project the growth of space-using groups. These forecasts are briefly reviewed in Chapter III. These macro-economic forecasts and the analysis of dynamic spatial trends in Oakland's business and residential land uses added perspective to our analysis of the manner in which transport impacts will affect local demand. If land use changes are to occur, these demands must be strong enough to overcome resistance to change. As Chapter II will explain, this means that rents which indicate the intensity of demand must equal or exceed the construction and land cost constraints that do and will exist within each of our study areas.

In each study area, BART station impacts alter demand to the extent that they change the relative desirability of the area to the consumer groups that constitute the market for residential space and for the services of those who rent or buy commercial and industrial space. The types of impacts we looked for were categorized above. The framework used enabled us to study the nature and magnitude of the impacts that have already occurred and to forecast those that will come into play in future years as the system becomes fully operational.

Obviously the impacts varied from station to station. But very significant variances were also found to exist in the physical and social conditions of the sub-areas that constitute the neighborhoods surrounding a given station. Chapters IV, V, and VI summarize our analysis of socio-economic and physical conditions within the three study areas. These chapters also present our estimate of the land use demand impact that the construction of the stations has already had and present our forecast of the demand effect that their impact will have in the future.

Demand itself is a functional relationship between the price that individuals or corporations will pay for a given land use and the amount or quality such space that they will take. For the purpose of the analytical framework we will present the end result of that relationship in terms <u>only</u> of the price or value that can be obtained for a given type of use under the conditions that exist after BART impact. Thus, in effect, our analysis will look at the full range of circumstances that will set the parameters for a demand function that will apply to the various uses in each area after BART's impact is felt, but to quantify this relationship we will present a number that will indicate the particular point on this demand curve that is reflective of the price that will be paid given the quantity of that land use that can logically be expected to develop within each of the areas.

Chapter VII then summarizes our use of the land use change-predicting framework and costs presented in Chapter II to forecast

the change in land use potential that will result from the interaction of the forces instigating change in demands and the change resisting costs, assuming no changes in the present set of public policies. Chapter VIII then explains the primary and secondary effects or changes that will likely result from the forecasts of future land use potential, and Chapter IX considers in general terms, the possible changes in forecasts of future land use potential given alternative changes in public policy.

THE NATURE OF THE BASIC LOCALIZED DEMAND RELATIONSHIPS

As mentioned before, the demand effects of the stations' construction and operation vary from area to area because of both differences in the impacts and in the underlying socio-economic and physical conditions that affect the areas' desirability for alternate consumer groups. But the basic localized demand-determining relationships that can be altered by the impact of the BART stations do not change. They will be summarized below. We utilized these relationships to frame the research we did in the neighborhoods toward information that would permit us to forecast the demand effect of BART impacts as we did in Chapters IV, V, and VI.

Residential Demand

At any one time the demand for housing varies dramatically between locations. This difference in demand reflects the preferences of consumers for some locations over others. It is expressed in price differences for housing of equal size, type and non-locationally linked amenities. The individual households through willingness to pay rents or ownership costs seek more than just a unit with or without some land around it. The housing users make their rental or purchase decisions based on the anticipation of a host of attributes other than those that constitute the dwelling unit and its attached space. They buy or rent a residential environment that includes such features as the social

and economic composition of the neighbors, the esthetic nature of the area including the outside appearance of the other dwelling units, educational facilities and friends for their children, street safety, noise level, prestige and relative accessibility to frequently-visited places, most importantly place of work. At any one point in time these attributes are unique to each particular neighborhood. In fact, one can define a neighborhood as being a group of spatially clustered dwelling units that share a very similar set of these demand-differentiating attributes. That definition may not conform to census tracts or other common methods of collecting data, but it does conform to the perceptions of housing users and the demand-determining preferences and incomes that pertain to them. If a BART impact changes one or more of the significant attributes, it alters the demand for housing in that neighborhood.

Another way of saying this is that a particular type of housing demand is, at any one point in time, relevant to each neighborhood with a particular type of attributes. Thus we can see that a particular demand function relates to those groups of neighborhoods with similar attributes and call such a group of possibly non-contiguous neighborhoods a social area. When some significant attributes of a neighborhood are changed, it can be said to alter its social area. This automatically puts it in a new demand category. Figure I-1 presents a representation of a city in terms of this abstract relationship.

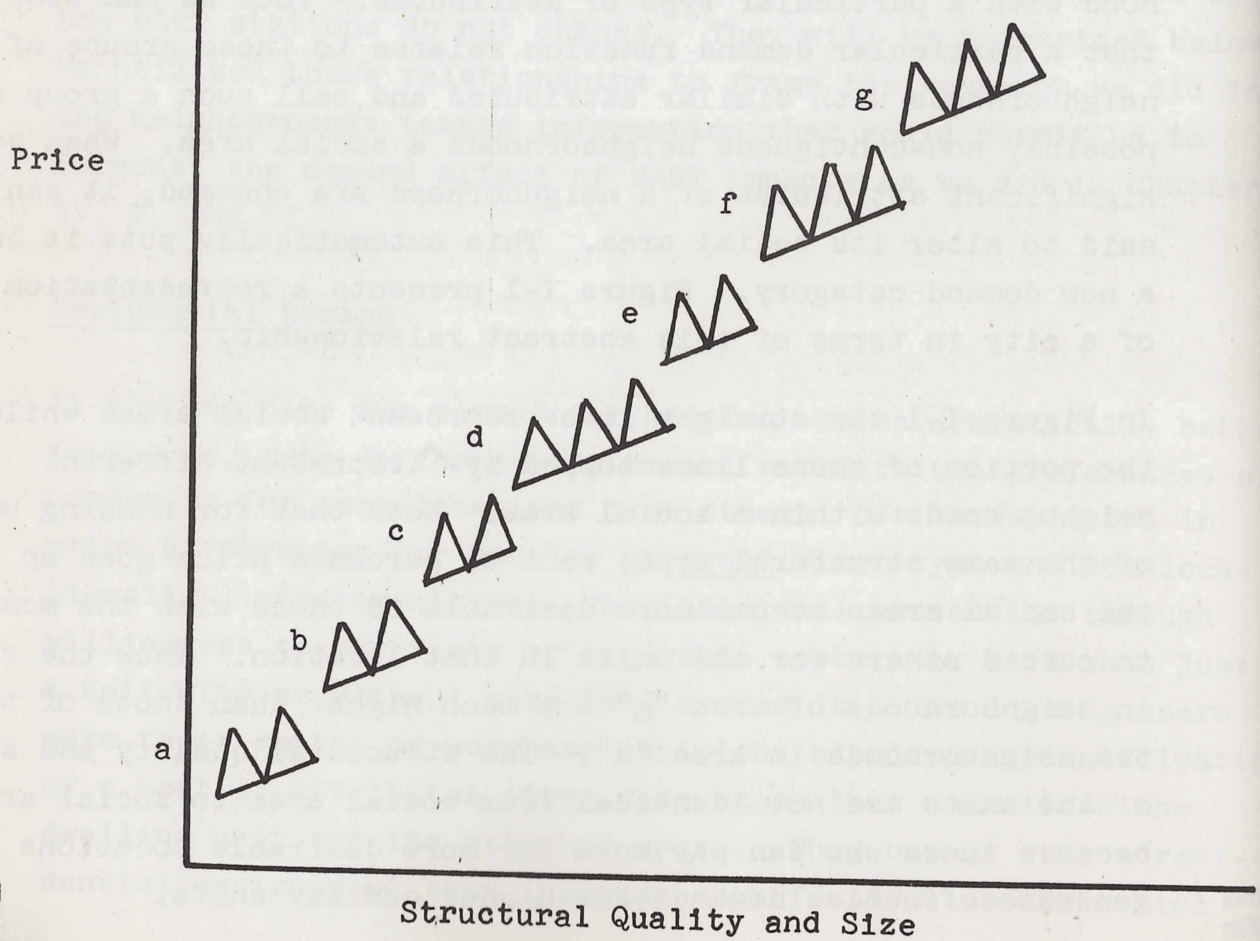
In Figure I-1 the straight lines represent social areas while the portion of these lines topped by ^ represent different neighborhoods within a social area. Note that for housing units of the same structural type, rent or purchase price goes up as the social areas become more desirable to those with the money to outbid others for the units in that location. Thus the rents in neighborhoods of area "g" are much higher than those of the two neighborhoods in area "a". The structural quality and size of the units are not identical from social area to social area because those who can pay more for more desirable locations also generate effective demands for higher quality units.

If a BART impact produces a net change in the attributes of a neighborhood which are perceived as important by housing demanders, the demand for residential units in the neighborhood is altered. In terms of the relationship depicted in Figure I-1, such attribute-changing impacts work to alter the social area designation of a neighborhood so that it will change its position in the figure in relation to the other neighborhoods where there is no net change.

In each study area our research separated the station area into its neighborhood components. The social, physical and economic attributes of each neighborhood were then studied to suggest the effect of the various impacts.

FIGURE I-1

The Neighborhoods and
<u>Social Areas of a City</u>



Commercial Demand

The demand for commercial space at alternative locations tends to reflect relative differences in the cost of doing business and the ability to generate sales. The forces which interact within a system that is less complicated than the system described above for housing demand include three major factors.

The first relates to the confluence of people that have ready access to a given site. Sales differences relate to the relative proximity of the location to large numbers of buyers with the income to make purchases. As was explained earlier in this chapter the sales potential of a site is greater, the larger the number of buyers and the higher the incomes of this consumer or client base. This same relationship applies to the demand for client-serving office uses such as banks, travel agencies, and medical and dental offices. It further applies to commercial uses which serve local, community or regional markets. In all cases, this proximity is a function of residential patterns and the impedance-reducing impact of transport systems.

The second major factor is the agglomeration effect which relates to the nearness of other complimentary customer-attracting facilities and services. In his famous paper on spatial competition, Harold Hotelling proved analytically that competing sellers of similar products do best if they are located next to each other.[8] Retailers, automobile dealers, hotel owners, and heads of offices where information is processed have drawn the same conclusion through personal experience and observation. Thus a component of the demand for a given facility at a specific site is determined by the existence of and the proximity to other similar

[8] Harold Hotelling, "Stability in Competition", Economic Journal, Vol. XXXIX, 1929, pp. 41-57.

facilities. The existence of an agglomeration of antique stores along College Avenue, of medical offices on Pill Hill, or of automobile dealers along Broadway or Fruitvale Avenue attests to this phenomenon.

The third major demand factor relates to the advertising attributes of the location and as has already been explained, is a function of the number and income of buyers and clients, the nearness of other customer-attracting facilities and services, and the relative visual exposure of passers-by, especially those who are able to enter the establishment.

Industrial Demand

Industrial demand is a function of the cost of bringing raw materials and finished products to and from alternative sites and of the cost of the labor services needed for production. Since trucks have represented an increasingly large role of the total transportation costs associated with industrial production, and since BART is not designed to carry goods, the location of a plant near to the freeway will remain as an important determinent of industrial demand. Therefore, the only cost factors that are likely to be impacted by BART are those associated with attracting labor to the area and with affecting the land use potential so that improvements are made to the desirability of the area's environment. We live in an age where people have become used to commuting long distances so that the convenience and desirability of a location from the workers' point of view has become more important than transportation access per say. For example, the presence of attractive restaurants and shopping facilities will tend to make it easier for a firm or plant to attract female labor than the lack of such facilities.

CHAPTER II

A Framework for Forecasting the Localized Effect of the BART System on Land Use Potential

The discussion in Chapter I identifies the kinds of direct impacts that can result from the introduction of a new transit system and describes the nature of the forces that interact with these BART impacts to effect change. In the case of land uses, it is the overall and localized demands for residential, commercial and industrial space that are the "push factors" that create the potential for change and it is the costs of constructing new land uses or altering the condition of the present stock that are the forces that resist change. The last section of Chapter I then describes the nature of the basic localized demand relationships that can be altered by BART impacts so as to provide demand pressures for land use change. Those changes in land use potential that will occur do so in those situations where the forces that resist change are relatively weak and/or the BART impact on the change-seeking or demand forces is great.

The purpose of this chapter is to develop a general framework or model for measuring these costs or resistances to change, for identifying the interaction between the supply and demand variables involved in land use decision-making, and for predicting the amount of demand or push force that would have to be generated to overcome this resistance and cause land use change. Because the costs of constructing and demolishing different kinds of space are relatively similar for all of Oakland and are not affected by BART impacts, this component of the "change resisting forces" can be presented once as the basis of the model and used in each separate analysis of the manner in which it will interact with other factors so as to maintain or upset the present equilibrium in the three study areas.

The framework or model developed in this chapter to be used in later chapters to forecast the localized effect of the BART system on land use potential is presented as a series of tables which translate the relevant parameters into numerical relationships between variables so as to be useful for forecasting opportunities for particular types of new development. Given the BART impacts on the demand parameters that will be specifically identified for each neighborhood of each study area in Chapters IV, V, and VI, within the context of the overall macro demands identified in Chapter III, the end result or output of using this model will be a forecast of development alternatives or land uses that are potentially feasible in each study area given the present zoning pattern there or assuming changes in the existing zones.

A DESCRIPTION OF THE RELATIONSHIPS THAT FORM THE BASIS OF THE FRAMEWORK OR WORKING MODEL

Any land use pattern arises from a whole assemblage of private land use decisions. Each such decision is a function of several factors, interacting together in a market which is inherently dynamic, constantly absorbing and responding to changes in the elements of supply and demand. At the time that a decision is made to build on a given site, consideration of the relevant parameters relating to that particular development indicates its feasibility. The process of creating a structure on a particular parcel of land and also that of deciding about the "best" type of capital improvement for that land having first identified the range of possibilities. Because population, income, personal preference, mortgage availability, building and transportation technology, and other factors do not remain constant, and because the mere passage of time creates a dynamic of its own as it causes buildings to deteriorate in particular ways, such development decisions are constantly being made.

From the perspective of the developer, this decision means

an initial choice concerning the basic structure type -- a single family house, an apartment building, or an office building, for examples. It also means a decision about the economic stratum by which the dwellings or structures are expected to be used and the approximate size of such a market segment. The the development process itself involves business functions such as negotiating for land and for construction financing as well as dealing with the suppliers of labor and materials for the physical construction of the building.

Generally, the user is rather remote from the direct development decision, but is instead in the position of consumer in the market place, reacting favorably or unfavorably to what is available for his use and thus indirectly greatly influencing subsequent development through the expression of his demand in the form of the rents or prices that he is willing to pay.

The decision as to the "best" type of development for a given parcel depends on the income-producing potential of the property. Whether from the perspective of an owner-builder, a lender, or an outside developer, one can look upon the property as an income-producing use for investable funds. Thus, investment criteria such as the rate of return on invested funds will determine the feasible development options and the "best" use of land which is already owned or of land which is to be acquired for development. In esssence, the developer's gain can be translated into the difference between the value of the completed property and the sum of all land and development costs.

Therefore, the process of identifying feasible development options begins by defining the physical parameters which describe the basic structures that are likely to be built in the areas under study including the type and size of structure and the type of construction. To these variables we can assign

cost estimates that currently apply in Oakland. We can consider that the construction costs per square foot are given parameters in that any changes in them are not a function of changes in the demand in the neighborhoods. However, changes in the size of structures and units to be built are directly related to the preferences of renters and owners and are therefore a function of the demand.

It is then important to identify the magnitude of the demand for each type of use as indicated by the rents that are obtainable. As was described in Chapter I, the nature of the basic localized demand relationships which describe the area's socio-economic and physical conditions affect the areas' desirability to alternate consumer groups and thus determine the magnitude of the rents or prices which are obtainable for each type of land use. Thus the term "rent" conveys something more than the payment made by a tenant for the right to live in a dwelling which belongs to another or to use another's structure for purposes of one's business. It refers to the price of a commodity which is fixed in supply and therefore must be allocated as a function of demand. For example, consider an acre of land with a small house on it in the wilderness. The demand for it will be very limited and the rental income very modest. However, if this acre of land with the same home on it were located at the center of a large, prosperous city, the demand will be so great that the rent will provide a sizeable income. Thus, the dollar amount of obtainable rent is primarily a function of the demand for space at a particular location. Those factors which are included in this concept of demand were described and explained in Chapter I and include:

1. Social and economic characteristics of the neighborhood
2. Adjacent land uses
3. Location and accessibility
4. Amenities and other property improvements

5. Physical condition of the structure and other adjacent structures
6. Lot size
7. Style or design of building
8. Size of the structure or unit

Thus, rents are a function of the structure and of its location, of the comparative advantages of this location over alternate sites, and of the expectations of how the individual demand factors may change. As such, the rents are determined by the interaction of these forces in the market.

The level of rents has no necessary relation to the historical costs incurred. An extravagantly constructed building may represent costs far greater than the capitalized value of obtainable rents, and a building constructed just prior to an inflationary period may produce rents greatly in excess of its historical cost. The important relationship is that between the capitalized value of market-determined rents and the costs incurred in building or acquiring an existing property. If such a relationship is to be financially beneficial, the former value should exceed the latter. The price of an existing building represents the capitalized value of the rents expected from it. If the building is sold, the present owner pays the previous owner in advance the expected future rent from the property.

Therefore, changes in one or more of the demand factors listed above and described in Chapter I may cause changes in demand as evidenced in changes in obtainable rents, which in turn will affect the financial feasibility of new construction or of existing improvements and land uses. Thus if one or more of the BART impacts described in Chapter I produces a net change in one or more of the attributes of a neighborhood or commercial street which are perceived as important by demanders the demand for such land uses at that location is altered, and this

change is seen as a change in the obtainable rents in the market. Therefore the critical step in this analysis of the feasibility of alternative developments or land uses is to carefully consider all of the factors which determine obtainable rents and the effect of BART impacts upon these factors.

So, for each type of unit, determined by structural type and size, that is likely to be built in Oakland the total construction cost can be compared with the capitalized value of obtainable rents, given BART impacts, in order to forecast the financial feasibility of new development after these impacts are felt. To the developer, the monthly cash flow from rents must be sufficient to cover loan payments which will amortize a given loan in a given period of time. Further, the net worth of future receipts from the property should produce a rate of return on investment that competes with the rates of return available on other investments and which provides the investor with a return to cover liquidity risks, depreciation, and other additional risks.

It should be mentioned that information relating to the individual developer, owner, or investor plays an important role in determining feasibility. One's tax bracket and attitude toward risk may enchance the desirability of certain projects. For example, in the case where the sum of depreciation and loan interest exceed the net income from the property in a particular year, the tax shelter which results may be advantageous to certain high tax bracket individuals. Therefore, with the great diversity of individual situations which exists, a general model for determining "feasibility" might not always be useful. However, it is useful to look at the common procedures which apply in the more general case given a particular set of parameters and a given market situation, remembering that there will be some exceptions.

The difference between the capitalized value of rents and the

cost of constructing the new improvement is the value of the land. When obtainable rents provide revenue which exceeds the development costs including payment for the use of money, this difference is defined as the residual value of the land. From the landowner's point of view, the highest and best use of the land will occur when the residual value is the largest.

The residual value represents the maximum allowable land and other site costs for a particular development, given the obtainable rents and improvement costs. A comparison of this cost to the actual cost of land in our study areas will determine if the development is feasible in a particular neighborhood. Thus, in the case of vacant land, a comparison is made between the derived residual land value and the cost of land acquisition plus any site preparation costs. In the situation where there is an existing structure on the land, the residual value must be compared to the capitalized value of the existing structure which is represented in the market as the cost of purchasing the existing building and lot, plus costs of demolition and site preparation. Such comparisons will indicate which types of construction are feasible in which locations, given the obtainable rents and current construction costs, and assuming a certain density of development. Since the land cost per unit constructed is also a function of density as defined in the zoning ordinance, the density assumption can be varied so as to test the impact of zoning on the per unit land cost and therefore on feasibility.

Thus, when the value of an existing property is less than the residual land value for a particular new development, we can forecast that a succession of land use will ultimately occur as long as market conditions remain unchanged. That use which will most likely be realized will be that which offers the highest land value profit potential as long as the costs of land and existing improvements exceed the allowable land value, then that new development being considered will not occur. Thus, the concept of highest and best use rations

land over time as well as among competing development programs.

This analysis has direct implications for future maintenance expenditures in the study areas when land considered for a new development has an obsolete but still income-producing improvement upon it. To demolish the building in favor of some new use would mean to sacrifice its present value and thus add an amount equal to that value to the cost of the new structure. This could reduce many of the most promising new construction alternatives to money-losing propositions if the residual value is not large enough to compensate for the loss of valuable capital stock. Thus, an obsolete building may represent the highest and best use of that parcel of land. However, further obsolescence would ultimately bring its value below the residual land value so that a succession of land use would ultimately occur. Thus, an owner who is aware of the potential increase in demand for space in his area due to the introduction of the BART system and who is aware that his property is being considered for a new use, may be encouraged to refrain from additional expenditures for maintenance so as to hasten the deterioration process and thus, lower the value of the existing improvement so that it will be purchased and redeveloped.

Further, an owner who is holding out for a high price on his land may be surrounded by properties that are being sold and rebuilt. As this happens, obtainable rents will increase because of the general improvement in the area. Thus, the land will be worth more to the developer who will then be able to buy out the existing use at the higher price. An owner who is aware of this situation or who expects that such a succession of use will occur in the future is encouraged not to put much money into that property, but to let it continue to deteriorate and become obsolete.

Of course, there is the problem that land prices may be in-

flated in a station area in anticipation of increased demand and the resultant land use change. Owners and even the County Assessor may value properties in expectation of value increases that never become realities. Often, because of neighborhood conditions, demand does not increase as expected and therefore, new development may not be feasible specifically because existing land prices are too high. Any such increases in land values without comparable increases in rents, will lead to less development than would have been the case in the absence of such expectations.

It is now useful to summarize this discussion of the important determinants of land use change so as to set the stage for the formulation of a working model designed to test the feasibility of alternative land use changes given the introduction of the BART system. Essentially, the premise is that BART impacts will affect demand through the relationships explained in Chapter I so as to create the opportunity for landowners to receive increased rents; increased rents increase the income-producing potential of a property and assuming constant construction costs create the opportunity for greater land value profits and the landowners' desire to secure the greatest return per unit of land establishes a system of priorities which allocates land over time and among competing types of uses.

THE FRAMEWORK OR WORKING MODEL ASSUMING OAKLAND COST STRUCTURES

It is now possible to estimate the costs of conceptual development alternatives that are appropriate in the areas of study and to which the market may be expected to react favorably. These costs can be associated with the parameters just identified to develop a model to test development feasibility.

Residential Land Uses

Low Rise Apartments -
Tables II-1 and II-2 are designed to test the feasibility of the construction of apartment units of alternative types and

Table II-1-A

Allowable Site Cost per Unit for New Construction as a Function of Construction Cost and Obtainable Rents

Wood Frame Construction - 650 Sq. Ft. Apt.

	Rent per Unit per Month															
Construction Cost	$100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250
Good Construction $11,824 per unit	-1824	-824	176	1176	2176	3176	4176	5176	6176	7176	8176	9176	10176	11176	12176	13176
Good Construction w/ Basement Garage $13,824 per unit	-3824	-2824	-1824	-824	176	1176	2176	3176	4176	5176	6176	7176	8176	9176	10176	11176
Average Construction $9,666 per Unit	334	1334	2334	3334	4334	5334	6334	7334	8334	9334	10334	11334	12334	13334	14334	15334
Average Construction w/ Basement Garage - $11,666 Per Unit	-1666	-666	334	1334	2334	3334	4334	5334	6334	7334	8334	9334	10334	11334	12334	13334

Source: Gruen Gruen + Associates

Table II-1-B

Allowable Site Cost Per Unit for New Construction as a Function of Construction Costs and Obtainable Rents

Wood Frame Construction - 800 Sq. Ft. Apt.

	Rent per Unit per Month																
Construction Cost	$120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280
Good Construction $14,552 per unit	-2552	-1552	-552	448	1448	2448	3448	4448	5448	6448	7448	8448	9448	10448	11448	12448	13448
Good Construction w/ Basement Garage $16,552 per unit	-4552	-3552	-2552	-1552	-552	448	1448	2448	3448	4448	5448	6448	7448	8448	9448	10448	11448
Average Construction $11,896 per unit	104	1104	2104	3104	4104	5104	6104	7104	8104	9104	10104	11104	12104	13104	14104	15104	16104
Average Construction w/ Basement Garage $13,896 per unit	-1896	-896	104	1104	2104	3104	4104	5104	6104	7104	8104	9104	10104	11104	12104	13104	14104

Source: Gruen Gruen + Associates

Table II-1-C

Allowable Site Cost Per Unit for New Construction as a Function of Construction Costs and Obtainable Rents

Wood Frame Construction - 1,000 Sq. Ft. Apt.

Construction Cost	Rent per Unit per Month: $150	160	170	180	190	200	210	220	230	240	250	260	270	280	300	320	340	360
Good Construction $18,190 per unit	-3190	-2190	-1190	-190	810	1810	2810	3810	4810	5810	6810	7810	8810	9810	11810	13810	15810	17810
Good Construction w/ Basement Garage $20,190 per unit	-5190	-4190	-3190	-2190	-1190	-190	810	1810	2810	3810	4810	5810	6810	7810	9810	11810	13810	15810
Average Construction $14,870 per unit	130	1130	2130	3130	4130	5130	6130	7130	8130	9130	10130	11130	12130	13130	15130	17130	19130	21130
Average Construction w/ Basement Garage $16,870 per unit	-1870	-870	130	1130	2130	3130	4130	5130	6130	7130	8130	9130	10130	11130	13130	15130	17130	19130

Source: Gruen Gruen + Associates

Table II-1-D

Allowable Site Cost per Unit for New Construction as a Function of Construction Costs and Obtainable Rents

Wood Frame Construction - 1,200 Sq. Ft. Apt.

Construction Cost	Rent per Unit per Month $180	200	220	230	240	250	260	270	280	290	300	310	320	330	340	350	375	400
Good Construction $21,828 per unit	-3828	-1828	172	1172	2172	3172	4172	5172	6172	7172	8172	9172	10172	11172	12172	13172	15672	18172
Good Construction w/ Basement Garage $23,828 per unit	-5828	-3828	-1828	-828	172	1172	2172	3172	4172	5172	6172	7162	8172	9172	10172	11172	13672	16172
Average Construction $17,844 per unit	156	2156	4156	5156	6156	7156	8156	9156	10156	11156	12156	13156	14156	15156	16156	17156	19656	22156
Average Construction w/Basement Garage $19,844 per unit	-1844	156	2156	3156	4156	5156	6156	7156	8156	9156	10156	11156	12156	13156	14156	15156	17656	20156

Source: Gruen Gruen + Associates

and qualities of construction and of alternative sizes. Tables II-A, II-B, II-C, and II-D contain cost estimates assuming wood frame construction at costs of $18.19 per square foot for good construction such as for the more luxurious high quality apartments and $14.87 per square foot for average construction as is used for many public housing units.[1] For each case we also add $2,000 to the cost per unit for the addition of a basement garage. Each of these four tables considers a different size of apartment unit including 650 square feet for a typical one bedroom apartment, 800 square feet for an average two bedroom, 1,000 square feet for a large two bedroom, luxury apartment, and 1,200 square feet for a three bedroom or apartment with a den or a large garden-type apartment. The numbers given in these tables represent the allowable site cost per new unit including costs or acquiring land and any existing improvements, of demolition, and of site preparation, as a function of construction costs and obtainable rents.

To calculate the numbers for allowable site cost given in each table we capitalize the annual future stream of income from rents and subtract from this amount the costs of constructing the new unit. The residual value which is left is the amount allowable to cover all site costs if such a unit were to be developed. Thus the calculations follow the formula:

$$\frac{\text{Monthly Rent per Unit} \times \text{12 months}}{.12} - \text{Construction Cost per Unit} = \text{Allowable Site Cost per Unit}$$

The reader will notice that multiplying the monthly by 12 and then dividing this amount by .12 is the same as multiplying the monthly rent by 100. Thus the calculations can be simplified.

1. Current construction costs used in this report are those given in the Building Standards Monthly published by the International Conference of Building Officals for Jan-Feb. 1973 and adjusted to reflect the cost situation in the San Francisco Bay Area. This information was supplied to GG+A by the City of Oakland Building and Housing Department.

There is another way to calculate the allowable site costs which yields the same amount. We can describe the relationship between gross income and the value of the property by using a factor called the gross income multiplier. Such an indicator is widely used by appraisers and investors for appraising income properties. For the areas included in this study, a gross annual income multiplier of 8.33 is appropriate. Thus the formula for calculating allowable site costs becomes:

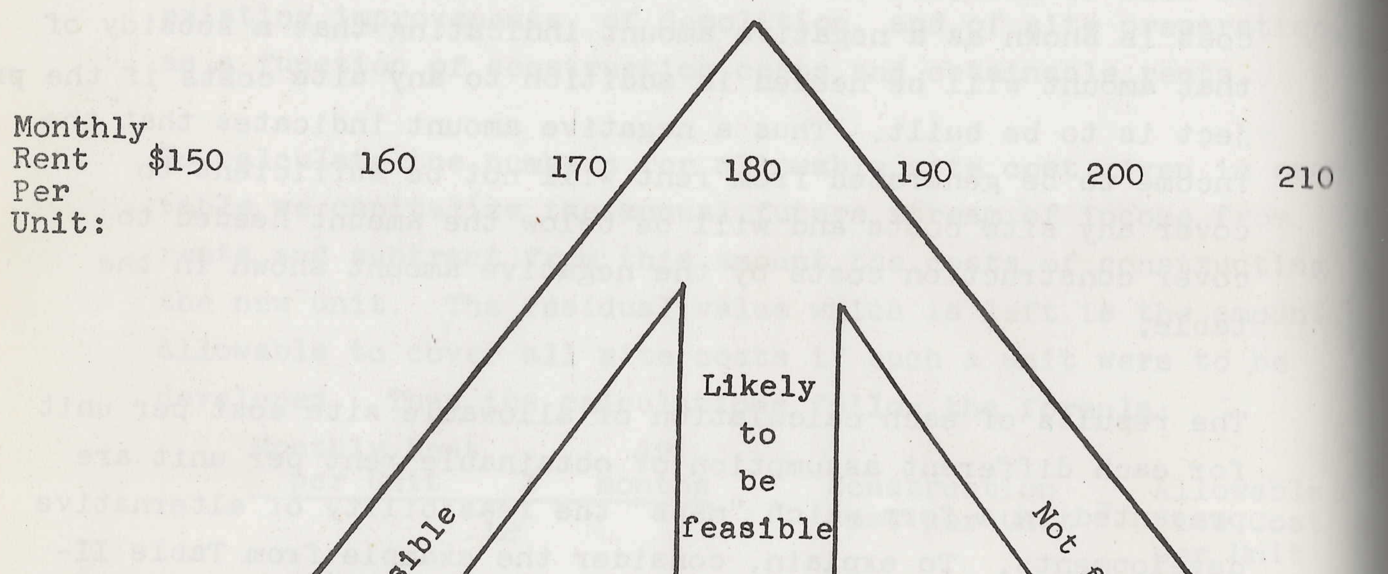
$$\text{Monthly Rent per unit} \times \text{12 months} \times 8.33 - \text{Construction Cost per unit} = \text{Allowable Site Cost per unit}$$

Again, in this case, multiplying the monthly rent by 12 and then by 8.33 is the same as multiplying the rent figure by 100.

If the future income from the project is not large enough to be able to amortize the cost of construction, the allowable site cost is shown as a negative amount indicating that a subsidy of that amount will be needed in addition to any site costs if the project is to be built. Thus a negative amount indicates that the income to be generated from rent will not be sufficient to cover any site costs and will be below the amount needed to cover construction costs by the negative amount shown in the table.

The results of each calculation of allowable site cost per unit for each different assumption of obtainable rent per unit are presented in a form which "maps" the feasibility of alternative developments. To explain, consider the example from Table II-1-B for the construction of an 800 square foot wood frame apartment. Reading from that table, it is shown that the development of such an apartment--that is, good construction--will be financially feasible (profitable) if obtainable rent is $180 a month and if site cost for that unit is $3,448 or less. In general if the actual amount of site cost is located below or to the left of this amount of obtainable rent the project is likely to be feasible. The difference between the allowable site cost

which is the residual value of the land in that particular development scheme and the actual site cost as determined by the existing improvements and lot and demolition costs represents the amount of land value profit. The greater this difference, the more feasible the development of that project. Conversely, if the actual site cost exceeds the allowable amount and lies to the right of the amount of obtainable rent, the development of such a project is not feasible. Therefore, by knowing the obtainable rent for a certain project in each neighborhood and knowing the likely site cost per unit, a comparison of the relative position of the rents and the land costs on the table will indicate the feasibility of that particular development. Extracting from Table II-1-B, we illustrate these relationships:



To further confirm and illustrate this mapping, Figures II-1, II-2, and II-3 show a more detailed apartment house investment analysis assuming the same cost structure and assuming a 12-unit apartment building. Figure II-1 illustrates the case with $180 rent, Figure II-2 assumes $210 a month, and Figure II-3, $150, all assuming the same land cost of $3,448 per unit. The return on equity calculations confirm the results obtained from our mapping. When the rent is $180 per month as in Figure II-1, and the site cost is $3,448, an amount equal to the allowable site cost indicated in Table II-1-B, the return on equity is 7.4%, indicating the likely feasibility of the project. When the rent is assumed to be $210 per month as in Figure II-2 while the site cost remains at $3,448, an amount that is less than the allowable cost of $6,448 and located to the left of it in Table II-1-B, the return increases to 11.0%, indicating a much more feasible and profitable situation. However, if obtainable rent drops to $150 a month while site cost remains at $3,448, a greater amount than the $448 indicated as allowable and located to the right in the Table, the return drops to 3.75% indicating that an investor could earn more on other investments, many of which would be less risky, such as a saving account. We have further tested several cases from the feasibility mapping by using our more detailed computer model (PAPS) which simulates a given investment project, calculating annual cash flow and return on investment over a 40 year period.

It should be mentioned that this model applies to the "general" case. In any given situation, the return on equity and thus the feasibility will be altered by changing some of our assumptions. We use an income tax rate of 40% and assume that the investor can use the net loss to shelter taxable income from other sources. However an investor in a higher tax bracket may find any loss to be highly advantageous and thus may settle for a much lower rate of return to get such a loss. Thus, we can use our model to forecast which projects are

Figure II-1
Apartment House Investment Analysis
12 Apartments, each 800 Square Feet
$180 Rent

Investment Schedule:		
Construction Cost ($14,552 per unit X 12 units)		$174,624
Site Cost ($3,448 per unit X 12 units)		41,376
Total Cost of Investment		216,000
Mortgage (80%)		172,800
Equity		43,200
Income Schedule:		
Gross Annual Rent ($180 per mth X 12 mths X 12 units)		25,920
Less 5% vacancy		1,296
Effective Rental Income		24,624
Operating Expenses (36% Rental Income)		8,864
Net Income		15,759
Annual Mortgage Payment = i + pi		16,099
Net Cash Loss		- 320
First Year's Principal	$1,300	
Income Tax* (see below)	2,235	
Residual Value after depreciation		3,535
Net Gain		$ 3,215
Return on Equity 7.4%		

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* Income Tax Computation:

Net Income		$15,759
Less Interest	$14,800	
Less Depreciation	6,548 = 3% or 33 years S.L.	
		21,348
Tax Loss		- 5,589
Tax Shelter (40% rate)		$ 2,235

$i = \frac{14800}{172,800} = 8.56\%$

Source: Gruen Gruen + Associates

Figure II-2

Apartment House Investment Analysis

12 Apartments, each 800 Square Feet

$210 Rent

Investment Schedule:		
Construction Costs ($14,552 per unit X 12 units)		$174,624
Site Cost ($3,448 per units X 12 units)		41,376
Total Cost of Investment		216,000
Mortgage (80%)		172,800
Equity		43,200
Income Schedule:		
Gross Annual Rent ($210 per mth X 12 mths X 12 units)		30,240
Less 5% Vacancy		1,512
Effective Rental Income		28,728
Operating Expenses (36% Rental Income)		10,342
Net Income		18,386
Annual Mortgage Payment		16,099
Net Cash Flow		2,287
First Year's Principal	$1,300	
Income Tax * (see below)	1,185	
Residual Value after depreciation		2,485
Net Gain		$ 4,772
Return on Equity	11%	

* Income Tax Computation:

Net Income		$18,386
Less Interest	$14,800	
Less Depreciation	6,548	
		21,348
Tax Loss		- 2,962
Tax Shelter (40% rate)		$ 1,185

Source: Gruen Gruen + Associates

Figure II-3

Apartment House Investment Analysis

12 Apartments, each 800 Square Feet

$150 Rent

Investment Schedule:

Construction Cost ($14,552 per units X 12 units)		$174,624
Site Cost ($3,448 per unit X 12 units)		41,376
Total Cost of Investment		216,000
Mortgage (80%)		172,800
Equity		43,200

Income Schedule:

Gross Annual Rent ($150 per mth X 12 mths X 12 units)		21,600
Less 5% Vacancy		1,080
Effective Rental Income		20,520
Operating Expenses (36% Rental Income)		7,387
Net Income		13,133
Annual Mortgage Payment		16,099
Net Cash Loss		-2,966
First Year's Principal	$1,300	
Income Tax * (see below)	3,286	
Residual Value after depreciation		4,586
Net Gain		$ 1,620

Return on Equity 3.75%

* Income Tax Computation:

Net Income		$13,133
Less Interest	$14,800	
Less Depreciation	6,548	
		21,348
Tax Loss		- 8,215
Tax Shelter (40% rate)		$ 3,286

Source: Gruen Gruen + Associates

likely to be feasible, very feasible, and not feasible, noting that there may still be some cases where the circumstances may differ enough so as to alter these forecasts.

Further, an investor's expectations of the likely future of a property are influenced by his perceptions of the neighborhood environment. Thus, he may demand ahigher rate of return for the same project in an areas where he perceives more risk than in a more stable neighborhood. Thus, the threshold beyond which a certain type of construction seems to be feasible will differ depending on the perceived "quality" of the location.

High Rise Apartments -

Tables II-2-A, II-2-B, II-2-C, and II-2-D, present a mapping of the likely feasibility of the construction of high rise apartments. The numbers were calculated in the same manner as described above. The tables show the rents and allowable site costs for the construction of 650, 800, 1,000, and 1,200 square foot apartments. The base construction costs are $26.75 per square foot for good construction and $22.36 for average construction, plus $2,000 per unit for a basement garage and additional costs that are a function of height. The tables test heights of 6 and 12 floors.

Single Family Dwellings -

Tables II-3-A and II-3-B show the cost data for 1,500 square foot and 2,000 square foot single family detached dwellings. We consider both good wood frame construction at $20.87 per square foot and average construction at a cost of $15.84 per square foot. We also test the feasibility of building a private garage which will add about $1,200 to the cost of each dwelling. Revenue is shown as monthly rents per unit or as sales price per unit. If these homes are sold or if any of the apartment units previously considered are sold as condominiums, the sales price will very likely be higher than the capitalized value of the income stream that could be earned if the dwelling were rented. The buyer will own his own home,

Table II-2-A

Allowable Site Cost per Unit for New Construction as a Function of Construction Costs and Obtainable Rents

High Rise Steel Frame Construction - 650 Sq. Ft. Apt.

Construction Cost	Rent per Unit per Month $160	170	180	190	200	210	220	230	240	250	260	270	280	290	300
Good Construction $19,805 per unit 6 Floors & garage	-3805	-2805	-1805	-805	195	1195	2195	3195	4195	5195	6195	7195	8195	9105	10195
Good Construction $20,640 per unit 12 Floors & garage	-4640	-3640	-2640	-1640	-640	360	1360	2360	3360	4360	5360	6360	7360	8360	9360
Average Construction $16,883 per unit 6 Floors & garage	-883	117	1117	2117	3117	4117	5117	6117	7117	8117	9117	10117	11117	12117	13117
Average Construction $17,580 per unit 12 Floors & garage	-1580	-580	420	1420	2420	3420	4420	5420	6420	7420	8420	9420	10420	11420	12420

Source: Gruen Gruen + Associates

Table II-2-B

Allowable Site Cost per Unit for New Construction as a Function of Construction Costs and Obtainable Rents

High Rise Steel Frame Construction - 800 Sq. Ft. Apt.

	Rent per Unit Per Month															
Construction Cost	$200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350
Good Construction $23,914 per unit 6 floors + garage	-3914	-2914	-1914	-914	86	1086	2086	3086	4086	5086	6086	7086	8086	9086	10086	11086
Good Construction $24,941 per unit 12 floors + garage	-4941	-3941	-2941	-1941	-941	59	1059	2059	3059	4059	5059	6059	7059	8059	9059	10059
Average Construction $20,318 per unit 6 floors + garage	-318	682	1682	2682	3682	4682	5682	6682	7682	8682	9682	10682	11682	12682	13682	14682
Average Construction $21,176 per unit 12 floors + garage	-1176	-176	824	1824	2824	3824	4824	5824	6824	7824	8824	9824	10824	11824	12824	13824

Source: Gruen Gruen + Associates

Table II-2-C

Allowable Site Cost per Unit for New Construction as a Function of Construction Costs and Obtainable Rents

High Rise Steel Frame Construction - 1,000 Sq. Ft. Apt.

	Rent per Unit per Month															
Construction Cost	$250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400
Good Construction $29,392 per unit 6 floors + garage	-4392	-3392	-2392	-1392	-392	608	1608	2608	3608	4608	5608	6608	7608	8608	9608	10608
Good Construction $30,676 per unit 12 floors + garage	-5676	-4676	-3676	-2676	-1676	-676	324	1324	2324	3324	4324	5324	6324	7324	8324	9324
Average Construction $24,897 per unit 6 floors + garage	103	1103	2103	3103	4103	5103	6103	7103	8103	9103	10103	11103	12103	13103	14103	15103
Average Construction $25,970 per unit 12 floors + garage	-970	30	1030	2030	3030	4030	5030	6030	7030	8030	9030	10030	11030	12030	13030	14030

Source: Gruen Gruen + Associates

Table II-2-D

Allowable Site Cost per Unit for New Construction as a Function of Construction Costs and Obtainable Rents

High Rise Steel Frame Construction - 1,200 Sq. Ft. Apt.

Construction Cost	Rent per Unit per Month																
	290	300	310	320	330	340	350	360	370	380	390	400	410	420	430	440	450
Good Construction $34,870 per unit 6 floors + garage	-5870	-4870	-3870	-2870	-1870	-870	130	1130	2130	3130	4130	5130	6130	7130	8130	9130	1013
Good Construction $36,411 per unit 12 floors + garage	-7411	-6411	-5411	-4411	-3411	-2411	-1411	-411	589	1589	2589	3589	4589	5589	6589	7589	758
Average Construction $29,476 per unit 6 floors + garage	-476	524	1524	2324	3524	4524	5524	6524	7524	8524	9524	10524	11524	12524	13524	14524	1552
Average Construction $30,764 per unit 12 floors + garage	-1764	-764	236	1236	2236	3236	4236	5236	6236	7236	8236	9236	10236	11236	12236	13236	142

Source: Gruen Gruen + Associates

Table II-3-A

Allowable Site Cost per Unit for New Construction as a Function of Construction Costs and Obtainable Rents or Sales Prices

Single Family Wood Frame Construction - 1,500 Sq. Ft. Dwelling

Rent per Dwelling per Month ($) / Sales Price per Dwelling ($1,000)

Construction Cost	$225 / $ 27	250 / 30	275 / 33	300 / 36	325 / 39	350 / 42	375 / 45	400 / 48	425 / 51	450 / 54	475 / 57	500 / 60
Good Construction $31,305 per unit	0	0	0	0	1195	3695	6195	8695	11195	13695	16195	18695
Good Construction with Garage $32,805 per unit	0	0	0	0	0	2195	4695	7195	9695	12195	14695	17195
Average Construction $23,760 per unit	0	1240	2740	6240	8740	11240	13740	16240	18740	21240	23740	26240
Average Construction with Garage $25,260 per unit	0	0	2240	4740	9940	9740	12240	14740	17240	19740	22240	24740

Source: Gruen Gruen + Associates

Allowable Site Cost per Unit for New Construction as a Function of Construction Costs and Obtainable Rents or Sales Prices

Single Family Wood Frame Construction - 2,000 Sq. Ft. Dwelling

Construction Cost	Rent per Dwelling per Month ($) / Sales Price per Dwelling ($1,000): $300 / $ 36	325 / 39	350 / 42	375 / 45	400 / 48	425 / 51	450 / 54	475 / 57	500 / 60	525 / 63	550 / 66	575 / 69	600 / 72
49 Good Construction $41,740 per unit	0	0	0	0	0	760	3260	5760	8260	10760	13260	15760	1826
Good Construction with Garage $43,240 per unit	0	0	0	0	0	0	1760	4260	6760	9260	11760	14260	1676
Average Construction $31,680 per unit	0	820	3320	5820	8320	10820	13320	15820	18320	20820	23320	25820	2832
Average Construction with Garage $33,180 per unit	0	0	1820	4320	6820	9320	11820	14320	16820	19320	21820	24320	2682

Source: Gruen Gruen + Associates

building up his equity and may be able to take advantage of tax provisions relating to ownership. Therefore, as an approximation, a gross annual income multiplier of 120 can be used to convert rent into sales price.

Density Considerations-

Having derived several tables to test the likely feasibility of alternative developments, it is necessary to test the likelihood that projects will be feasible at a specific location. Table II-4 is designed so as to relate the present site costs in a given neighborhood to the per unit site costs derived as allowable at each rent level as shown in Tables II-1, II-2, and II-3. Actual site cost per unit is thus a function of all residential zoning categories.

Considering the example discussed earlier for the construction of an 800 square foot apartment, if rents are $180 per unit per month, allowable site cost is determined to be $3,448 or less. If the actual cost of land is $6.00 per square foot in a particular neighborhood, Table II-4 indicates that the land will have to be developed at a density of R-70, R-80, or R-90 if that project is to be feasible at that location, assuming the $180 rent level. The zoning designations used in this table correspond to the general densities contained in the Oakland Zoning Ordinance and shown Figure II-4.

Thus, a forecast of whether or not 800 square foot apartments that rent for $180 per month will be built in the areas with site costs of $6.00 per square foot will depend on the availability of land that is now zoned for such high density apartments. If such land is not available, the project will not be feasible unless the zoning is changed. To the extent that such land is available, the project could feasibly be built. If there is a large supply of such land, this type of unit could be built until the demand for such units is met. At this point, the level of obtainable rents will change to reflect a changed demand situation.

Table II-4

Per Unit Site Cost as a Function of Allowable Zoning Density[1]

New Residential Construction

Zoning	Site Cost per Sq. Ft. of Land Area												
	$2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00	5.25	5.50
R - 30	$12500	13750	15000	16250	17500	18750	20000	21250	22500	23750	25000	26250	27500
R - 40	6250	6875	7500	8125	6250	9375	10000	10625	11250	11875	12500	13125	13750
R - 50	3750	4125	4500	4875	5250	5625	6000	6375	6750	7125	7500	7875	8250
R - 60	2000	2200	2400	2600	2800	3000	3200	3400	3600	3800	4000	4200	4400
R - 70	1125	1238	1350	1463	1575	1688	1800	1913	2025	2138	2250	2363	2475
R - 80	750	825	900	975	1050	1125	1200	1275	1350	1425	1500	1575	1650
R - 90	375	413	450	488	525	563	600	638	675	713	750	788	825

[1]Site Cost includes: a) Cost of the land plus any site preparation costs if the land is vacant or b) the cost of the existing improvements and the lot if they were to be purchased plus demolition costs plus site preparation costs.

Source: Gruen Gruen+Associates

building up his equity and may be able to take advantage of tax provisions relating to ownership. Therefore, as an approximation, a gross annual income multiplier of 120 can be used to convert rent into sales price.

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Having derived several tables to test the likely feasibility of alternative developments, it is necessary to test the likelihood that projects will be feasible at a specific location. Table II-4 is designed so as to relate the present site costs in a given neighborhood to the per unit site costs derived as allowable at each rent level as shown in Tables II-1, II-2, and II-3. Actual site cost per unit is thus a function of all residential zoning categories.

Considering the example discussed earlier for the construction of an 800 square foot apartment, if rents are $180 per unit per month, allowable site cost is determined to be $3,448 or less. If the actual cost of land is $6.00 per square foot in a particular neighborhood, Table II-4 indicates that the land will have to be developed at a density of R-70, R-80, or R-90 if that project is to be feasible at that location, assuming the $180 rent level. The zoning designations used in this table correspond to the general densities contained in the Oakland Zoning Ordinance and shown Figure II-4.

Thus, a forecast of whether or not 800 square foot apartments that rent for $180 per month will be built in the areas with site costs of $6.00 per square foot will depend on the availability of land that is now zoned for such high density apartments. If such land is not available, the project will not be feasible unless the zoning is changed. To the extent that such land is available, the project could feasibly be built. If there is a large supply of such land, this type of unit could be built until the demand for such units is met. At this point, the level of obtainable rents will change to reflect a changed demand situation.

Table II-4

Per Unit Site Cost as a Function of Allowable Zoning Density[1]

New Residential Construction

Zoning	Site Cost per Sq. Ft. of Land Area $2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00	5.25	5.50
R - 30	$12500	13750	15000	16250	17500	18750	20000	21250	22500	23750	25000	26250	27500
R - 40	6250	6875	7500	8125	6250	9375	10000	10625	11250	11875	12500	13125	13750
R - 50	3750	4125	4500	4875	5250	5625	6000	6375	6750	7125	7500	7875	8250
R - 60	2000	2200	2400	2600	2800	3000	3200	3400	3600	3800	4000	4200	4400
R - 70	1125	1238	1350	1463	1575	1688	1800	1913	2025	2138	2250	2363	2475
R - 80	750	825	900	975	1050	1125	1200	1275	1350	1425	1500	1575	1650
R - 90	375	413	450	488	525	563	600	638	675	713	750	788	825

[1] Site Cost includes: a) Cost of the land plus any site preparation costs if the land is vacant or b) the cost of the existing improvements and the lot if they were to be purchased plus demolition costs plus site preparation costs.

Source: Gruen Gruen+Associates

Table II-4 (cont'd)

Per Unit Site Cost as a Function of Allowable Zoning Density

New Residential Construction

Site Cost per Sq. Ft. of Land Area

Zoning	$5.75	6.00	6.25	6.50	6.75	7.00	7.25	7.50	7.75	8.00	8.25	8.50	8.75
R - 30	$28750	30000	31250	32500	33750	35000	36250	37500	38750	40000	41250	42500	43750
R - 40	14375	15000	15625	16250	16875	17500	18125	18750	19375	20000	20625	21250	21875
R - 50	8625	9000	9375	9750	10125	10500	10875	11250	11625	12000	12375	12750	13125
R - 60	4600	4800	5000	5200	5400	5600	5800	6000	6200	6400	6600	6800	7000
R - 70	2588	2700	2813	2925	3038	3150	3263	3375	3488	3600	3713	3825	3938
R - 80	1725	1800	1875	1950	2025	2100	2175	2250	2325	2400	2475	2550	2625
R - 90	863	900	938	975	1013	1050	1088	1125	1163	1200	1238	1275	1313

Source: Gruen Gruen + Associates

Table II-4 (cont'd)

Per Unit Site Cost as a Function of Allowable Zoning Density

New Residential Construction

Zoning	Site Cost per Sq. Ft. of Land Area												
	$9.00	9.25	9.50	9.75	10.00	10.25	10.50	10.75	11.00	11.25	11.50	11.75	12.00
R - 30	$45000	41250	47500	48705	50000	51250	52500	53750	55000	56250	57500	58750	60000
R - 40	22500	23125	23750	24375	25000	25625	26250	26875	27500	28125	28750	29375	30000
R - 50	13500	13875	14250	14625	15000	15375	15750	16125	16500	16875	17250	17625	18000
R - 60	7200	7400	7600	7800	8000	8200	8400	8600	8800	9000	9200	9400	9600
R - 70	4050	4163	4275	4388	4500	4613	4725	4838	4950	5063	5175	5288	5400
R - 80	2700	2775	2850	2925	3000	3075	3150	3225	3300	3375	3450	3525	3600
R - 90	1350	1388	1425	1463	1500	1538	1576	1613	1650	1688	1725	1763	1800

Source: Gruen Gruen + Associates

Figure II-4

Oakland Zoning Designations for Residential Land Uses

Zoning Designation	Housing Type	Dwelling Units per Square Feet of Lot Area
R-30	Single Family	one per 5,000 sq. ft. lot
R-40	Garden Apartment	one per 2,500 sq. ft. lot
R-50	Medium Density Apartments	one per 1,500 sq. ft. lot
R-60	Medium-High Density Apartments	one per 800 sq. ft. lot
R-70	High Density Apartments	one per 450 sq. ft. lot
R-80	High Rise Apartments	one per 300 sq. ft. lot
R-90	Downtown High Rise Apartments	one per 150 sq. ft. lot

There are bonus provisions whereby greater densities are allowed in some zoning categories if certain conditions are met. For example, greater densities are allowed for developments on corner lots and on lots facing public parks, for high rise buildings, and for projects designed for senior citizens. In such cases the land cost per unit will be less than the amounts shown in Table II-4 for a particular zoning category. To use Table II-4 in these special case, the number of square feet of lot area per dwelling unit should be adjusted to allow for the bonus provisions so that, for example, the land cost assuming a bonus in an R-60 zone could be found in the R-70 row of the table if that special provision approximately doubled the density from one unit per 800 square feet to one per 400 or 450 square feet.

Commercial Land Uses

Analysis of the feasibility of the new construction of commercial land uses follows a slightly different framework than that used for residential projects. The commercial model deals in costs per square foot of floor area and of lot area. Further the framework maps the feasibility of new construction showing the allowable land cost as a function of rents, construction costs, and parking requirements. The tables are specifically designed to test the feasibility of constructing certain key uses, namely general retail sales, and administrative and professional offices and banks. Tables II-5 and II-6 relate to these uses respectively. In each case, the tables consider two types of construction, that used for steel frame, concrete, and masonry structures and that for wood frame buildings. For office construction, the steel frame costs $27.70 per square foot and the wood frame $20.65 per square foot. For retail construction, steel frame costs $21.50 per square foot and wood frame $16.05 per square foot. Parking requirements can be met by either above ground parking lots costing $.54 per square foot for asphalt paving or basement garages at $8.56 per square foot of garage area. In all cases $.40 per square foot of lot area is subtracted out to cover the costs of demolition and site preparation.

Table II-5-A

Allowable Land Cost per Square Foot of Lot Area for New Construction as a Function of Construction Costs, Obtainable Rents and Parking Requirements

General Retail Sales

Parking: 1 slot per 400 sq. ft. of Floor Area

Steel Frame Construction

Rents per Square Foot per Month	Land Cost per Square Foot of Lot Area Assuming a Floor Area Ratio of:											
	1		2		3		4		8		10	
	AG*	UG*	AG	UG	AG	UG	AG	UG	AG	UG	AG	UG
$ .25	1.28	-	2.02	-	2.39	1.54	2.61	5.04	.47	-	.51	-
.30	3.78	-	5.35	8.04	6.14	16.54	6.61	25.04	4.91	36.24	5.12	58.64
.35	6.28	4.54	8.68	18.04	9.89	31.54	10.61	45.04	9.36	76.24	10.55	118.64
.40	8.78	9.54	12.02	28.04	13.64	46.54	14.61	65.04	13.80	116.24	14.35	178.64
.45	11.28	14.54	15.35	38.04	17.39	61.54	18.61	85.04	18.25	156.24	18.97	238.64
.50	13.78	19.54	18.68	48.04	21.14	76.54	22.61	105.04	22.69	196.24	23.58	298.64
.55	16.28	24.54	22.02	58.04	24.89	91.54	26.61	125.04	27.14	236.24	28.20	358.64
.60	18.78	29.54	25.35	68.04	28.64	106.54	30.61	145.04	31.58	276.24	32.82	418.64

* AG: Above Ground; UG: Underground Parking

\- indicates that new construction is not feasible without subsidy

Source: Gruen Gruen + Associates

Allowable Land Cost per Square Foot of Lot Area for New Construction as a Function of Construction Costs, Obtainable Rents and Parking Requirements

General Retail Sales

Parking: 1 slot per 400 sq. ft. of floor area

Wood Frame Construction

Rents per Sq. Ft. of Floor Area per Month	1		2		3		4	
	AG*	UG*	AG	UG	AG	UG	AG	UG
$ .20	1.51	-	2.32		2.73	2.89	2.97	6.84
.25	4.01	-	5.65	8.94	6.48	17.89	6.97	26.84
.30	6.51	4.99	8.99	18.94	10.23	32.89	10.97	46.84
.35	9.01	9.99	12.32	28.94	13.98	47.89	14.97	66.84
.40	11.51	14.99	15.65	38.94	17.73	62.89	18.97	86.84
.45	14.01	19.99	18.99	48.94	21.48	77.89	22.97	106.84
.50	16.51	24.99	22.32	58.94	25.23	92.89	26.97	126.84
.55	19.01	29.99	25.65	68.94	28.98	117.89	30.97	146.84
.60	21.51	34.99	28.99	78.94	32.73	132.89	43.97	166.84

* AG: Above Ground; UG: Underground Parking

\- indicates that new construction is not feasible without subsidy

Source: Gruen Gruen + Associates

Table II-6-A

Allowable Land Cost per Square Foot of Lot Area for New Construction as a Function of Construction Costs Obtainable Rents and Parking Requirements

Administrative & Professional Offices & Banks

Parking: 1 slot per 600 sq. ft. of floor area

Steel Frame Construction

Rents per Square Foot per Month	Land Cost per Square Foot of Lot Area Assuming a Floor Area Ratio of:											
	1		2		3		4		8		12	
	AG*	UG*	AG	UG	AG	UG	AG	UG	AG	UG	AG	UG
$ .30	.92	-	1.64	-	2.04	.80	2.30	3.10	-	-	-	-
.35	3.93	1.20	5.93	8.50	7.04	15.80	7.77	23.10	3.22	15.10	3.42	25.50
.40	6.95	6.20	10.23	18.50	12.04	30.80	13.23	43.10	9.54	55.10	10.09	85.50
.45	9.96	11.20	14.52	28.50	17.04	45.80	18.69	63.10	15.86	95.10	16.76	145.50
.50	12.97	16.20	18.81	38.50	22.04	60.80	24.16	83.10	22.18	135.10	23.42	205.50
.55	15.98	21.20	23.10	48.50	27.04	75.80	29.62	103.10	28.50	175.10	30.09	265.50
.60	19.00	26.20	27.39	58.50	32.04	90.80	35.09	123.10	34.82	215.10	36.76	325.50

* AG: Above Ground; UG: Underground Parking

\- indicates that new construction is not feasible without subsidy

Source: Gruen Gruen+Associates

Allowable Land Cost per Square Foot of Lot Area for New Construction as a Function of Construction Costs, Obtainable Rents and Parking Requirements

Administrative & Professional Offices & Banks

Parking: 1 slot per 600 sq. ft. of floor area

Wood Frame Construction

Rents	1 AG*	1 UG*	2 AG	2 UG	3 AG	3 UG	4 AG	4 UG
$ .25	2.16	-	2.98	-	4.10	4.09	4.55	8.44
.30	5.17	.39	6.74	9.74	9.10	19.09	10.01	28.44
.35	8.19	5.39	11.99	19.74	14.10	34.09	15.48	48.44
.40	11.20	10.39	16.28	29.74	19.10	49.09	20.94	68.44
.45	14.21	15.39	20.58	39.74	24.10	64.09	26.40	88.44
.50	17.22	20.39	24.87	49.74	29.10	79.09	31.87	108.44
.55	20.23	25.39	29.16	59.74	34.10	94.09	37.33	128.44
.60	23.25	30.39	33.45	69.74	39.10	109.09	42.80	148.44

* AG: Above Ground; UG: Underground Parking

\- indicates that new construction is not feasible without subsidy

Source: Gruen Gruen + Associates

To explain the use of these tables, consider Table II-5-A for example. The construction of a retail store at a cost of $21.50 per square foot of floor area that will rent for $.25 a square foot per month will be feasible if the land for a one story building and for an adjacent parking lot that includes one 400 square foot slot for every 400 square feet of floor area can be acquired at a cost of $1.28 or less per square foot of lot area. This $1.28 represents the maximum cost of lot and existing improvements after $.40 per square foot of lot area has been subtracted for demolition and site preparation costs. This same interpretation is true for Tables II-5-B, II-6-A and II-6-B.

The floor-to-lot area ratios increase as one reads across the tables. Steel frame construction is the only type calculated at floor-area ratios of 8 and 10 and the construction costs increase at such ratios due primarily to extra costs for elevators. In both sets of tables the construction of both ground level parking lots and underground basement garages are tested. It can be seen that in almost all cases it is cheaper to build parking underground than to pay for the extra land needed for parking lots on ground level. This is especially true as the floor-area ratio increases.

Thus, a comparison of the allowable land costs and the required rents to those actually obtainable in any Oakland neighborhood under study will indicate in which areas such commercial land uses will be feasible. Knowledge of the floor-area ratios allowable under the particular zoning category in a given area will indicate if such feasible development can actually be built there.

CHAPTER III

The Parameters of BART Effect - A Macro Analysis

THE CONSTRAINTS THAT DELIMIT THE EFFECT OF BART IMPACTS

As discussed in the previous chapter, the effect that the impacts of a new transportation system can have on land use potential and social change is limited by the local and regional conditions upon which those impacts are imposed. The following three chapters of this report describe existing conditions and historical trends within the areas around the three stations we studied, forecast the impact of the BART system upon these local areas and predict the demand effect of these interactions in terms of obtainable rents. In this chapter we will set the stage for the consideration of the effects on the local demand for various types of space-using activity by summarizing our analysis of the regional and city-wide demand factors within which the localized demands must operate.

The interactions between BART, regional and city-wide demand for space, and the localized demand for space around stations is complex because BART impacts demand in two ways. First it affects the relative demand for space-utilizing activities through the impacts categorized and described in the previous chapter. Also, as discussed previously, the nature of the effect, or for that matter whether or not there is an effect, of the BART impacts depends on the nature and magnitude of both the impacts and the other factors that work on the demand for space. The most important set of these demand factors are those that operate within the areas that we were assigned to study. But these demand factors operate within the scale and type of possibilities that exist within the region, or more specifically, the City of Oakland. These system-wide demands will be summarized in this chapter with respect

to the demand for industrial, residential office and retail space.

The second kind of BART effect on demand is the long run system-wide effects that change patterns and rates of economic growth in a region. We have not attempted to estimate the effect that BART will have on the overall productivity and resource-using capability of the region. Such considerations were clearly beyond the scope of our study assignment. But such growth-affecting BART impacts were in the minds of many that we interviewed to draw the conclusions about city-wide demands for space that we summarized below. The existing analyses and forecasts that we reviewed to make the estimates presented below also considered the forthcoming operation of the BART system. Thus this second system-wide effect, while not dealt with specifically by us, may have crept into our analysis because it was among the variables included by those whose expertise and prior analysis we used to make our own macro forecast of the nature and magnitude of the demand for alternate land uses in Oakland.

COMMERCIAL AND INDUSTRIAL ACTIVITY IN OAKLAND

Table III-1 presents the changes in employment between 1960 and 1970 for the City of Oakland, the Oakland Community Labor Market, Alameda County and the San Francisco/Oakland SMSA. The Oakland Community Labor Market includes Oakland, Piedmont, Emeryville and San Leandro. The entire SMSA is unusual in terms of the relatively low percentage of employment in the manufacturing center. The 209,900 manufacturing employment estimate of the California Dept. of Human Resources presented in Table III-1 accounts for only 15% of the approximate 1,397,900 non-agricultural jobs. Put differently, non-manufacturing employment accounts for approximately 85% of all non-agricultural employment in the San Francisco/Oakland SMSA.

The uniqueness of the region's economic base is demonstrated by Table II-2 which uses Bureau of Labor Statistics data to compare metropolitan areas. Table III-2 utilizes an extremely broad definition,of the term service, in order to be able to draw upon Bureau of Labor Statistics data concerning the work force of various metropolitan areas. In this table all activities other than mining, agriculture, construction, fisheries and forest products are grouped into the service category. This of course obscures the differences in growth between such specific sub-sectors as personal services and such broader categories as transportation, communications and public utilities, some of whose employees are not generally considered to be operating in the service area. Nevertheless, it does present a dramatic exposition of the relationship between manufacturing, the area in which Oakland's initial strength developed, and that portion of the economy not concerned with the provision of hard goods or food products. The San Francisco/Oakland SMSA is the country's most highly service-oriented economy. This factor accounts for much of the region's economic vitality because the services do make up the fastest growing sectors of the U.S. economy. But this same factor also works to exacerbate Oakland's economic troubles.

Oakland developed initially as a manufacturing center and even in 1960 approximately 26% of its employment was in manufacturing. As the data summarized in Table III-1 shows, Oakland's manufacturing employment dropped 30.1% between 1960 and 1970. Much of this drop was, of course, in line with a nation-wide trend of manufacturing leaving older facilities in central cities to build new plants in the suburbs and smaller rural communities. But Oakland was particularly hard hit because of its location in a region that was itself not a particularly strong magnet for manufacturing. Conversely, the 37% increase in finance, insurance and real estate (FIRE) and the 30% increase in business and personal services partially reflect Oakland's entry into

Table III-1

Changes in Employment, 1960-1970
City of Oakland, Oakland Community Labor Market,
Alameda County and the San Francisco/Oakland SMSA

	Oakland			Oakland Community Labor Market			Alameda County			San Francisco/Oakland SMSA		
	1960		1970	1960		1970	1960		1970	1960		1970
Agriculture	Not tabulated			Not tabulated			6,700		5,200	12,800		11,200
% Change								-22.4			-12.5	
Mining	Not tabulated			Not tabulated			900		1,200	1,900		2,000
% Change								-33.3			-5.3	
Construction	8,588		9,560	14,600		13,800	22,100		21,900	69,800		71,000
% Change		+11.3			-5.5			-0.9			+1.7	
Manufacturing	40,354		28,188	61,500		51,700	79,200		86,800	205,900		209,900
% Change		+30.1			-15.9			+9.6			+1.9	
TCU	17,888		19,379	22,200		27,100	26,900		34,500	106,800		139,200
% Change		+8.4			+22.1			+28.3			+30.3	
Wholesale Trade	12,562		11,360	17,800		21,600	21,000		25,300	79,800		89,600
% Change		-9.6			+21.3			+20.5			+12.3	
Retail Trade	26,020		28,484	36,700		41,200	54,900		69,300	164,400		210,300
% Change		+9.5			+12.3			+26.2			+27.9	
FIRE	7,824		10,734	9,300		12,400	14,900		19,600	75,900		105,500
% Change		+37.2			+33.3			+31.5			+39.0	
Service	20,291		26,392	36,200		48,000	57,400		89,200	200,300		301,500
% Change		+30.1			+32.6			+55.4			+50.4	
Government	23,580		29,158	25,900		37,100	68,500		106,000	176,700		265,900
% Change		+23.7			+43.2			+54.7			+50.5	
Other	1,040		3,547	1,200		800	500		700	2,200		3,300
% Change		+241.1			-33.3			-40.0			+65.0	
TOTAL	158,147		166,802	225,400		253,700	353,000		459,700	1,096,300		1,409,100
% Change		+5.5			+12.6			+30.2			+28.5	

Table III-2

Employment Excluding Agriculture, Mining, Construction, Fisheries and Forest Products in Major Metropolitan Areas (1971)

Metropolitan Area (SMSA)	% Manufacturing	% Services[1]
San Francisco-Oakland	15.3	83.6
New York	19.5	80.4
Seattle-Everett	21.4	76.9
Atlanta	18.2	76.2
Boston	20.2	75.5
Los Angeles	26.8	72.0
San Jose	31.1	67.3
Cincinnati	31.7	66.8
Birmingham	26.7	65.6
Detroit	36.0	62.7

[1]This category includes finance, insurance, real estate, government, personal and business services, transportation, communications, utilities, wholesale and retail trade.

Source: GG+A using data from Employment and Earnings, State and Area, 1939-71, U.S. Dept. of Labor, Bureau of Labor Statistics

the type of activities that represent the main economic strength of the region.

We did not attempt to accomplish an economic base analysis or full scale consideration of Oakland's comparative advantages. As a portion of this study we did review a variety of existing forecasts including a comprehensive analysis of Oakland's economy completed in 1968 by the Stanford Research Institute. The SRI forecast projected the growth of employment in finance, insurance and real estate plus other services in Oakland at a slightly faster rate than has been the case for the 1968-72 period. But we feel the overall nature of these forecasts was quite reasonable and in tune with the economic forces at work in Oakland. Thus the fact that the 1968-72 projections were a little high merely suggests to us that the 1970-85 forecasts could perhaps be better guidelines for the 1972-85 period. Therefore, we utilized the basic forecasts provided by SRI but shifted the time frame of the SRI forecasts several years forward. They are presented in Table III-3.

THE DEMAND FOR INDUSTRIAL SPACE

Since little if any employment growth is forecast for either wholesaling or manufacturing, the amount of additional space needed by activities not now in Oakland will be quite small, though some new activities will come into Oakland just as some existing ones will die out. However, there will be a demand for space needed by activities already in Oakland who will seek to remodel or rebuild existing factilities. Many of the activities that stand to benefit most from a suburban location have already left Oakland. Those that remain will have a continuing need to replace obsolete facilities. In some cases the most economical way for plants and warehouse facilities to modernize will be for them to expand to adjoining lands. This is particularly the case where portions of the existing facility include hard

[illegible]

Sector Employment Projections for Oakland
1975 and 1985

	1970	1975*	1985*	Change 1970 - 85 #	Change 1970 - 85 %
Total Employment	166,802	173,800	194,400	+27,578	+16.5
Office Using	66,284	73,700	87,100	+20,816	+31.4
FIRE	10,734	12,100	15,500	+ 4,766	+44.4
Services	26,392	29,600	37,100	+10,708	+40.6
Government	29,158	32,000	34,500	+ 5,342	+18.3
Trade					
Wholesale	11,360	11,100	10,200	- 1,160	-10.2
Retail	28,484	29,100	29,900	+ 1,416	+ 5.0
Industrial and Other (includes manufacturing, warehousing, TCU, contract construction and other not else-where allocated)	60,674	59,900	67,200	+ 6,526	+10.8

* To nearest hundred

Source: Economic Projections for Oakland to 1975 and 1985, Stanford Research Institute (1968) and adjusted by Gruen Gruen + Associates

to move and expensive to rebuild equipment such as refrigeration or furnace-related equipment.

In other cases, activities will seek to move to newly-developing industrial areas in Oakland. The industrial acreages being made available by the Port of Oakland are likely to be a prime source of sites for such activities. When older plants move or new plants are built to compete with producers using older space, the amount of new acreage they obtain tends to be larger than the land used by the older factory or warehouse.

If we assume that between now and 1985 4,000 jobs in contract construction, transportation, communications, warehousing and manufacturing will be either totally new or created by significant shifts to new types of activities in the same sector, approximately 135 added acres would be required for the facilities in which these employees will work assuming 30 to the acre. If another 3% of the jobs in manufacturing, transportation, communications and public utilities move into remodeled or new space each year, a total of 61 additional acres would be required each year, or 915 from 1970 to 1985. The 61-acre figure is undoubtedly on the high side since many transportation, communication and utility jobs are in offices, not factories. But sometimes these offices are located "near the plant" on industrial land.

We do not mean to imply that we have done an exhaustive study of Oakland's future need for industrial acreage. But the employment and technological trends we have studied suggest that it is not unreasonable to assume that between 800 and 1,300 acres of industrial land will be needed between now and 1985 if Oakland's industry is to keep modern. Most of this space is, of course, already in the hands of those who will need it, as the great bulk of it represents the need to modernize existing facilities. However, some new sites will also be sought and some existing

facilities will seek to acquire adjoining land. Some firms seeking new sites will be able to locate in the Port of Oakland's new 186 acre distribution center. Other sites can be provided in older industrial areas, some of which do have obsolete facilities or portions of the lands. The Fruitvale area around one of the stations we studied represents one of the areas where such industrially-zoned land exists. As we shall see, the demand for this land is not likely to be intense and is most likely to come from activities now in the area seeking to expand and/or remodel.

THE DEMAND FOR OFFICE SPACE

The projection of employment shown in Table III-3 indicates that 20,800 additional employees will require office space in Oakland between 1970 and 1985. In addition, some of the space used by existing office jobs will expand. If each of the 20,800 employees filling new jobs in the office-using sectors of Oakland's economy utilized the 1965 national average of 129 square feet per person, an additional 2,680,000 square feet of office space would be required. The average use of office space per employee has been going up for a variety of economic and technological reasons; we believe that the average will be up to approximately 170 square feet per person in 1985. In that case, the 20,800 added jobs would generate a requirement for 3,536,000 square feet of space.

The general increase in space per employee will also generate an increased demand for space to be used by the approximately 66,000 job holders already in this sector. If each job gradually increases its space needs 30 square feet, the total demand will be increased 2,000,000 square feet. Thus even if we ignore the demands that will come from users rejecting the continued use of older buildings and the present supply of vacant space, about 5,500,000 square feet of office space or about 360,000 square feet per year would be demanded between 1970 and 1985. This number should be considered

the mid-range of a forecast that could vary 25% on either side of this number.

The location of this space and whether the high or the low portion of the forecast range will be demanded will be affected by the following factors:

1. Oakland's downtown area is quite spread out which tends to have two contradictory effects. On the one hand, the lack of tight office building concentration tends to lighten the attraction for having central city office space located in one specific area at the city center. On the other hand the large amount of available land outside of the center of the city tends to keep land prices relatively low at the center so that the pressure for those office users who do not need a center city location to seek cheaper sites outside the central business district is less great than would otherwise be the case.

2. Oakland's proximity to San Francisco provides it with unusually tough competition as a location for regional or nationwide headquarters activities. On the other hand, downtown Oakland's land values are considerably lower than San Francisco's and this could be used as a weapon in the attempt to attract some office space.

3. The East Bay, and in particular the suburbs, represents a potentially rich supply of relatively inexpensive clerical labor. In particular, the female labor pool in the suburbs is quite large. Clerical wages tend to be somewhat lower in the East Bay than in San Francisco. BART reduces the impedance of getting this labor pool to areas around Oakland stations.

4. The city center redevelopment project may greatly enhance the ability of downtown Oakland to attract

office space. This will particularly be the case if it succeeds in dramatically altering the depth, scale and variety of retail offerings in downtown Oakland.

THE DEMAND FOR RETAIL SPACE

Table III-4 presents taxable retail sales volume for Oakland in the 1960-72 period. Overall, the city's sales barely kept ahead of the approximate 36.5% inflation for the period and in some key areas such as general merchandise, they fell behind the inflationary rate. Table II-5 compares Oakland with the region and the City of San Francisco. Neither the figures presented in the two tables concerning retail sales nor the forecast of employment in this category presented earlier in this chapter provide an adequate base upon which to forecast the demand for retail space. Instead these statistics and conversations with knowledgeable people in Oakland suggest that a great many of the existing facilities are obsolete. If dramatic new retail agglomerations and regroupings can be accomplished, the slow retail growth could be increased. If that is not done, the current pattern of stagnation will turn to decline.

POPULATION CHARACTERISTICS AND THE DEMAND FOR HOUSING

Between 1960 and 1970 Oakland population declined by 5,987 people. Total population declined from 367,548 to 361,561. In 1960, Oakland's housing stock consisted of 141,537 units; this total stock increased by 5,078 units to 146,615 in 1970. During the decade, 24,097 units were added so that approximately 20,000 units were demolished or converted.

As indicated by the data presented in Table III-6, the makeup of Oakland's population changed in the 1960-70 period. A review of social changes between 1960 and 1966 and in more recent years suggests the following:

Table III-4

Oakland Taxable Retail Sales

	1960	1972	% Change
Drug Apparel General Merchandise	158,601	193,762	22.2
Food Package Liquor	50,780	78,224	54.0
Eating & Drinking Places	53,343	83,136	55.9
Home Furnishings & Appliances	37,549	34,370	- 8.5
Building Material & Farm Implements	29,431	25,676	-12.7
Auto Dealer & Auto Supply & Service Stations	94,136	139,774	48.4
Other Retail Stores	43,792	108,058	46.8
Retail Stores Totals	467,632	688,571	47.2

Source: State of California, Board of Equalization

Table III-5

Retail Store Taxable Sales
(thousand of dollars)

	1960	1965	1972	% Change 60 - 72
Oakland	467,632	534,080	688,571	47.2
SF-Oak SMSA	2,767,926	3,615,544	5,713,565	106.4
9 Bay Area Cos.	3,716,316	5,043,600	8,573,987	131.0
San Francisco	1,016,918	1,156,342	1,528,302	50.2

Source: State of California, Board of Equalization

Table III-6

Population of Oakland by Ethnicity: 1960-1966
1960-1970 and 1966-1970

Ethnicity	1960	1966	Change 1960-66 Number	Change 1960-66 %	1970	Change 1960-70 Number	Change 1960-70 %	Change 1966-70 Number	Change 1966-70 %
TOTAL	367,550	373,460	+ 5,910	+ 1.6%	361,561	- 5,989	- 1.6%	-11,899	- 3.2%
White exc. Spanish surname	246,790	207,520	-39,270	-15.9%	178,140	-88,650	-35.9%	-29,320	-14.1%
White with Spanish surname	23,730	35,730	+12,000	+50.6%	?34,804? or 38,804	15,074 +11,074	+46.7%	- 926	- 2.6%
Negro	83,620	110,850	+27,230	+32.6%	124,710	+83,620	+49.1%	+13,860	+12.5%
Other nonwhite	13,410	19,360	+ 5,950	+44.4%	23,339	+ 9,929	+74.1%	+ 3,979	+20.5%

Source: U.S. Census, Oakland in Transition: A Summary of the 701 Household Survey, by the Survey Research Center, University of California, June 1969 and GG+A

1) The white population (excluding Spanish surname) is continuing its exodus out of Oakland.

2) The Spanish surnames do not appear to be continuing to migrate to Oakland at the 1960-66 rate. For some reason this population appears to be tapering off, since it is reasonable to assume that the decrease is due to a slowdown in the migration rate rather than births. Perhaps the census has undercounted the Spanish surname population.

3) While an increase in blacks is continuing, the rate appears to be decreasing. This contrasts with the other non-white population which continues to have the highest rate of increase.

4) Minority persons now comprise 51.8% of Oakland's total population.

5) Minority households include a wide range of incomes. Only 16% of all Oakland's residents would be defined as falling below the poverty level. Twenty-five per cent of all blacks and 19% of all Spanish-Americans would be so categorized.

Oakland continues to serve as a primary point of entry for lower income immigrants to the nation and the region. These relatively low income households plus the existing population of low and moderate income residents creates pressures on the low priced housing stock. The removal of older low priced units that, while not always of high quality, did provide a source of low-priced dwelling units has worked to exacerbate this pressure. A large number of older and cheaper units in West Oakland have been remodeled. East Oakland has taken a great deal of the pressure created by low and moderate income households seeking shelter. South Central Oakland, because it has a mixture of low and medium

priced housing is also likely to be exposed to the pressure of those who must have housing at "a price" and therefore cannot bargain hard for maintenance and quality improvement.

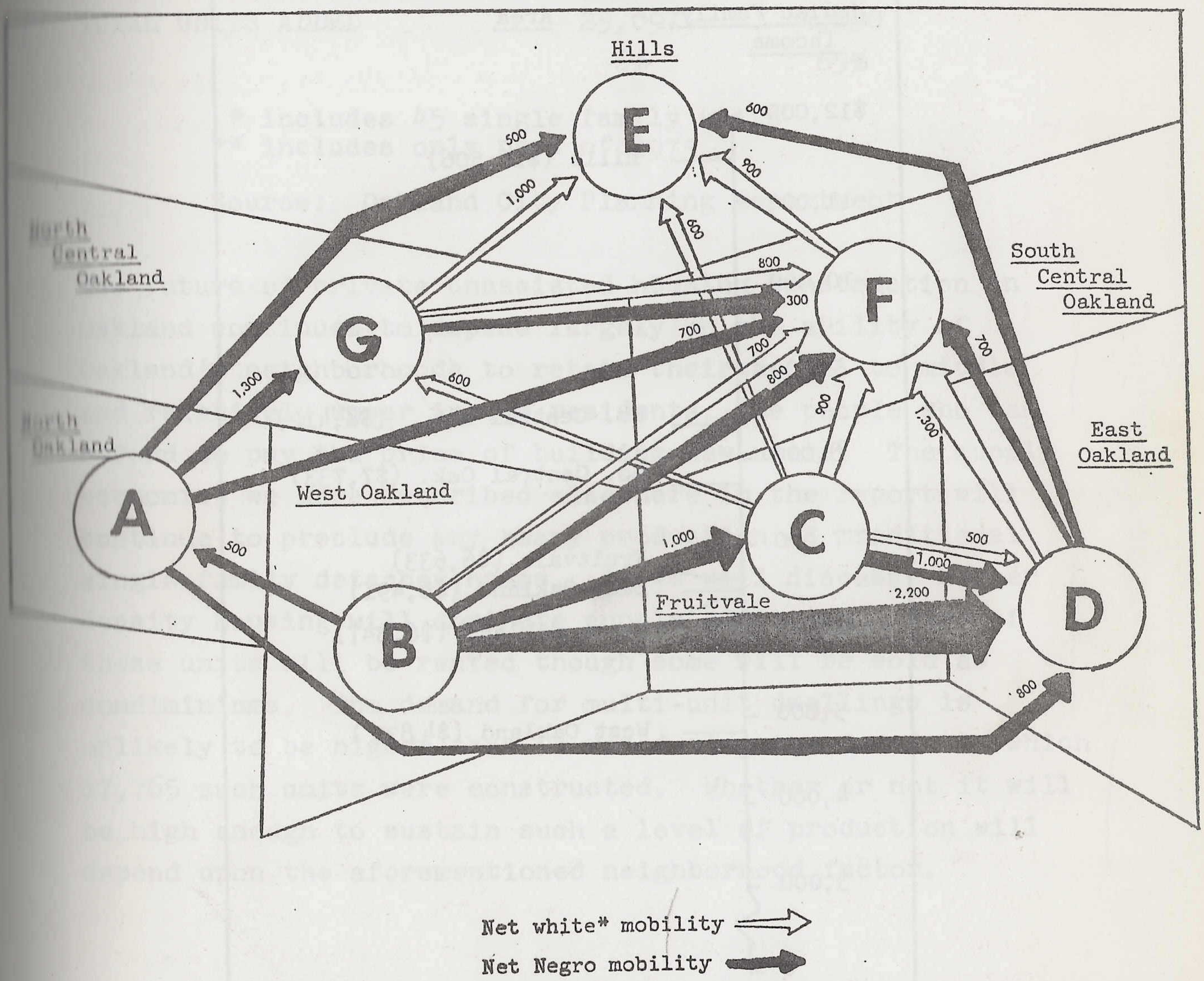
The City Planning Department's 1966 701 study does suggest th while many white families have been leaving the city, many others have been moving to North Oakland, South Central Oakland and the Hills. Black families seem to be most likely to move to East Oakland and South Central Oakland. Figure III-1 taken from a report to the 701 program of the University of California Survey Research Center presents a broad picture of these patterns for white and black movers between 1961 and 1966.

Figure III-2 presents the 1965 median family incomes in various areas of Oakland. Residents of the Oakland hills have the highest median income, followed by North Central Oakland and South Central Oakland. A significant number of the white households found by the Survey Research Center to have moved t the Hills came from outside of Oakland. Young white males and females are also continuing to move into Oakland probably attracted by the expanding service job base. Older white residents are also remaining in the Oakland housing market to significant extent.

This relatively heavy concentration of young and old, along with the fact that little vacant land remains untouched has worked to create the conditions that encourage the construction of multi-unit dwellings. This tendency toward higher density housing is typical of all America's older central cities. As might be expected, most of the privately financed new construction took place in the areas sought by higher income residents. Table III-7 presents a breakdown of housing construction activity in Oakland. In recent years the completion of governmentally assisted housing has increase demand.

Figure III-1

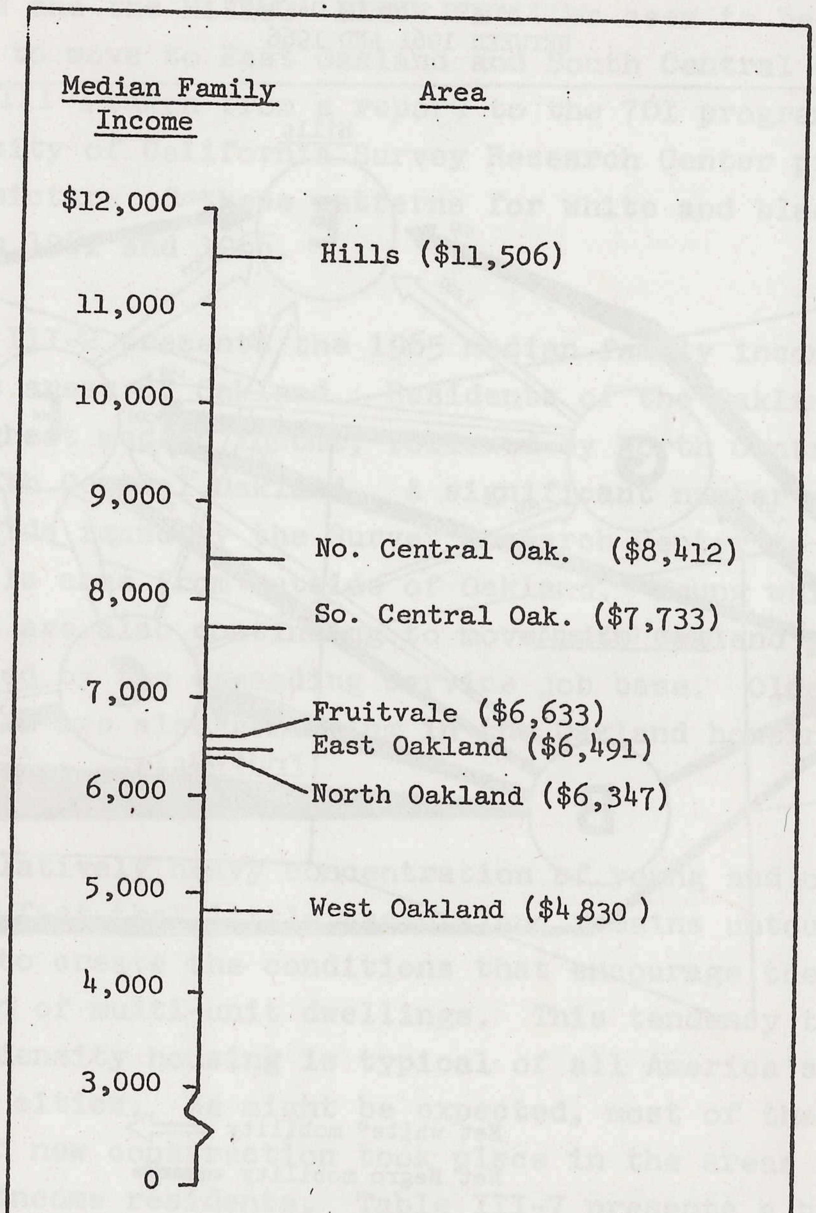
NET WHITE* AND NEGRO INTRA-CITY MOBILITY BETWEEN AREAS
LAST MOVES WITHIN OAKLAND
BETWEEN 1961 AND 1966



Source: University of California Survey Research Center, June 1969

Figure III-2

Median Family Income by Area of Oakland, 1965



Source: University of California Survey Research Center, June 1969

Table III-7

New Residential Construction in Oakland

	1960-70	1971-73**
private market single family	5,758	424
private market multi-unit	17,765	987
total non-assisted	23,532	1,411
government assisted	1,574	2,639*
TOTAL UNITS ADDED	25,097	4,050
	6%	65%

* includes 45 single family units
** includes only part of 1973

Source: Oakland City Planning Department

The future of private unassisted housing construction in Oakland continues to depend largely on the ability of Oakland's neighborhoods to retain their appeal to middle and relatively upper income residents, the people who can afford to pay the price of building new units. The supply economics we have described elsewhere in the report will continue to preclude any heavy production of traditional single family detached homes. As we will discuss, higher density housing will dominate supply additions. Many of these units will be rented though some will be sold as condiminiums. The demand for multi-unit dwellings is unlikely to be higher than it was during the decade in which 17,765 such units were constructed. Whether or not it will be high enough to sustain such a level of production will depend upon the aforementioned neighborhood factor.

CHAPTER IV

The Demand Effects of the BART System in the MacArthur Neighborhoods - A Micro Analysis

The demand for space in the area around the MacArthur BART station is a function of the interaction of the impacts of the BART system with the social, economic, and physical attributes of each of the MacArthur neighborhoods and of the overall demand for space in Oakland. Having discussed the overall, or macro demand, in Chapter III, it is the purpose of this chapter to identify and describe the various component neighborhoods of our study area, to describe the interaction of the BART system in the context of each neighborhood sub-area so as to identify the types of impacts which will result, and to then predict the direction and the magnitude of changes in the demand for space in each neighborhood in terms of obtainable rents. The first section of this chapter summarizes the demand effects and presents the estimates of obtainable rents after BART impact. The rest of the chapter then summarizes the research done to identify and describe the social, economic, and physical attributes of the study area and the types of impacts created by the introduction of the BART system.

A SUMMARY OF THE DEMAND EFFECTS

The demand effects of the station's construction and operation are a function of the extent to which BART impacts change the relative desirability of the area to the consumer groups that constitute the market for residential space and for the services of those who rent or buy commercial space. After analyzing the existing socio-economic and physical conditions within the MacArthur study area and estimating the types of impacts that BART has had and will have on that area, it is possible for Gruen Gruen + Associates to estimate the effects of these impacts on demand as they interact with

conditions in the various neighborhoods and to express these effects as the level of obtainable rents for both residential and commercial land uses.

These rents are given in Tables IV-1 and IV-2 and represent the amount of contract rent that will be obtainable for new construction after BART impacts in each of the separate neighborhood social areas that will be described in detail throughout this chapter. In each case, rents are estimated by quality of construction and size and type of unit. Estimated sales prices for single family units in each neighborhood are also included.

In general the forces at work are such that there will be little change in the desirability of housing in most of the MacArthur neighborhoods. Overall, the interaction of these forces determines the relative attractiveness that housing space will have when located in this area during future years. The end result of this attractiveness when considered in terms of the alternatives that confront demanders of space determines the rents that can be obtained for such space. Except for the impact of inflation that will affect all rents, the sales prices and rents obtainable for housing in the area will change by little because of the presence of BART.

There will be no changes in rents in neighborhoods "E" and "F" to the west of the Grove-Shafter Freeway as change causing forces from BART are very minor there. On the eastern side of that freeway in neighborhoods "A", "B" and "C", obtainable rents will continue to be higher than in "E" and "F" but BART impacts are still minimal and rents will not be affected. However, in neighborhood "D" rents will increase somewhat because of the development potential of the medical center there which will be enhanced by accessibility via BART. Also included in the table are amounts for the areas to the east of Broadway towards Piedmont.

Forecasts of

Obtainable Monthly Rents ($) and Sales Prices ($)

Per Residential Unit After BART Impact

MacArthur Station Area

Neighborhood	Const. Type	Single-Family Dwellings		Wood Frame Const. Apartments				High Rise Const. Apartments			
	(Sq. Feet)	1500	2000	650	800	1000	1200	650	800	1000	1200
A	Good	28,000	32,000	170	180	200	220	175	190	200	220
	Average	22,000	25,000	150	160	180	200	150	170	180	200
B	Good	25,000	26,000	170	175	195	210	175	180	200	210
	Average	20,000	22,000	150	160	180	200	150	170	180	200
C	Good	25,000	26,000	170	175	195	210	175	180	200	210
	Average	20,000	22,000	150	160	180	200	150	170	180	200
D	Good	30,000	35,000	180	220	250	300	190	225	270	325
	Average	26,000	28,000	170	190	230	260	180	200	250	280
E	Good	20,000	22,000	110	130	160	165	120	135	160	170
	Average	16,000	18,000	100	120	150	160	110	120	150	160
F	Good	21,000	22,000	125	145	175	180	130	150	180	180
	Average	18,000	20,000	110	125	155	160	120	130	160	160
Area East of Broadway towards Piedmont and immediate Pill Hill area	Good	40,000	48,000	225	260	340	400	230	300	380	420
	Average	38,000	42,000	195	240	300	320	200	280	330	360

Source: Gruen Gruen + Associates Estimates

Table IV - 2

Forecasts of
Obtainable Monthly Rents Per
Square Foot of Commercial Space
After BART Impact
MacArthur Station Area

Major Street	Cross-Street Boundaries	Retail Rents	Office Rents
Telegraph Avenue	W. MacArthur & 41st Street	$.20-.25	$.25-.35
Telegraph Avenue	45th St. & 33rd St. (excluding above)	.20	.25
W. MacArthur Boulevard	G/S Freeway and Broadway	.25	.35-.40
Broadway	42nd Street & 33rd Street	.20-.35	.35-.50
Pill Hill Area	Telegraph, Broadway MacArthur Fwy., and 28th Street	.25-.35	.45-.60
W. MacArthur Boulevard	G/S Freeway & Market Street	.15	.20
Grove Street	45th Street & 33rd Street	.15	.20

Source: Gruen Gruen + Associates Estimates

Because of the existing social and economic forces there the BART system will favorably impact the demand for space in that area thereby raising rents.

Like housing, there will be little change in the desirability of office and retail space along the major commercial streets. Again, it is true that commercial rents to the west of the Grove-Shafter freeway will not be affected by the introduction of BART service. Further, most of Telegraph Avenue and portions of Broadway will also not be directly affected. Only in those areas where there is some existing commercial activity that can benefit from the availability of BART and in the area immediately adjacent to the station will some change in demand be realized. These include the areas at and immediately surrounding the intersection of Broadway and West MacArthur, on Pill Hill and along Telegraph Avenue directly adjacent to the BART station.

It is important to note that these rents and prices are for new construction in the neighborhoods given the <u>existing</u> social, economic and physical attributes described in this chapter, and after the BART system is in full operation.

The question of "how long" is it until it is "after BART impact" cannot be answered with perfect exactness since it will depend on the length of time needed for the BART impacts to be fully recognized. Thus, when we are referring to rents and sales prices that will come into effect after BART impacts we are essentially saying that length of time that is required for the impacts to become discernable and the market to react to that discernment.

For example, when a new freeway offramp is placed in a community the analogous effect is not that which takes place immediately in that initially the only observable effect might be that the farmer places a fruit stand on the location in order to sell some of his produce. But in time, the locational impact of the freeway will be felt so that if

appropriate forces are at work, a shopping center will be placed on the land to remain there for the next thirty to forty years. The time period that we are talking about would be analogous to the time it takes for the forces to work themselves out so that the shopping center would be located there. We are not referring to the interim period during which the farmer uses the land for his fruit stand or the time after the shopping center begins to decline because more modern shopping centers are built at other locations. Another example would be that we are talking about the period of time <u>after</u> some new apartment units are constructed and filled, thus encouraging further construction, not the initial period during which the market is being tested by pioneers.

Furthermore, the conformation of demand attractions that will be provided by initial construction will tend to hasten the evolution pattern in each of the neighborhoods. As this new construction and other improvements begin to change the existing social area, the forecasted rents and prices will also change. Thus, our forecasts will no longer apply as soon as there is enough new development to change the characteristics of the existing neighborhood social area. This is also true where we are forecasting that no construction will take place. If no action is taken there may be an increasingly greater depressing effect felt after it becomes clear that the introduction of BART has not caused any new private development.

THE SOCIAL, ECONOMIC, AND PHYSICAL ATTRIBUTES OF THE INDIVIDUAL NEIGHBORHOOD AREAS

Before undertaking any analysis of the impacts of the BART station upon the neighborhoods around it, it is necessary to analyze the existing social, economic, and physical attributes of that area. Such information describes the existing environment into which the possibility for change is being introduced. It is not possible to predict the nature of the changes

which will actually result without knowledge about the present population in the area, about the factors which affect the areas' desirability and livability as a residential and/or commercial area, and without an understanding of past and present changes in the nature of the area and its residents.

Defining and Describing the Component Neighborhoods

As was described in Chapter I, a neighborhood can be defined as a group of spatially clustered dwelling units that share a very similar set of demand-differentiating attributes. Thus, data relating to population and housing characteristics can be analyzed so as to discover those residential blocks which have similar attributes and which together make up the existing individual neighborhoods within the larger MacArthur study area.

The smallest unit about which data is gathered and is readily available is the U.S. Census data for residential blocks. Selected data items relating to housing and population characteristics are available in this form. Gruen Gruen + Associations analyzed such information from the 1970 Census and identified six different neighborhoods within the MacArthur Study area on the basis of similar social and economic characteristics, and have identified these neighborhoods with letters A through F. The map in Figure IV - 1 defines the boundaries of each neighborhood. The data in Table IV - 3 describes the demographic and housing characteristics of each. For reasons which will be explained throughout this chapter, the data items which are the most significant indicators of neighborhood "quality" are the following:

*Average value per room and the percentage of single family and owner-occupied units.

*Average rent per month per room and the percentage of multiple and renter-occupied units.

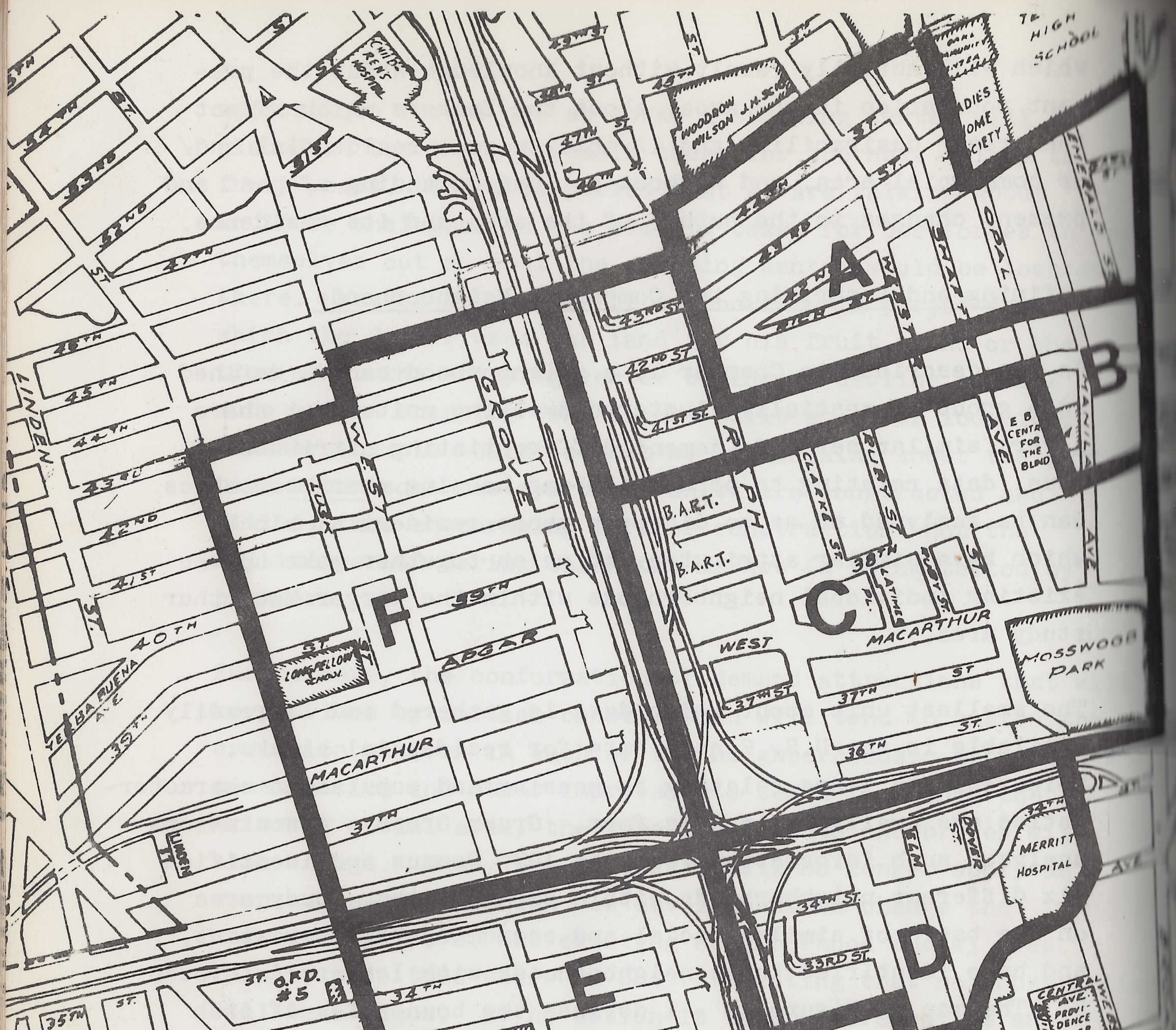


Figure IV-1

NEIGHBORHOODS BASED ON SOCIAL AREA ANALYSIS

MacArthur Station Area

Table IV - 3

Population and Housing Characteristics by Neighborhood

Mac Arthur Station Area

1970

Neighborhood:	A	B	C	D	E	F
No. Units per Neighborhood	738	320	1,167	540	844	1,515
Average # units per block	49.2	40	68.0	77.1	70.3	60.6
% Single Family	50%	11.25%	25.4%	8.9%	29.2%	37.9%
% Multiple	50%	88.75%	74.6%	91.1%	70.7%	62.1%
Average # occupied units per block	48.3	36.75	64.6	72.2	66.5	57.24
% owner-occupied	39%	11.2%	20%	6.9%	27.5%	33.1%
% renter-occupied	61%	88.8%	80%	93.0%	72.4%	66.9%
Average $ value - owner-occupied	19,980	NA	20,140	NA	16,700	18,400
Average $ value per room	3,740	NA	4,060	NA	3,120	3,600
Average $ contract rent per month	101.70	102.30	94.00	91.20	86.10	90.80
Average $ contract rent per month per room	27.70	32.27	29.00	33.50	24.30	23.20
Average # rooms/unit - owner-occupied	5.33	NA	4.96	NA	5.34	5.11
Average # rooms/unit - renter-occupied	3.67	3.17	3.24	2.72	3.54	3.90
% black owner-occupied units	19.1%	15.2%	24.1%	25.7%	87.7%	68.6%
% black renter-occupied units	16.1%	21.5%	23.1%	20.2%	91.9%	81.3%
Total population	1,551	457	2,222	984	2,056	2,945
% black	21.3%	23.4%	31.0%	23.3%	92.6%	85.2%
% under 18	18.2%	12.3%	21.7%	11.5%	30.9%	31.5%
% 62 and over	26.1%	30.9%	21.8%	19.3%	15.3%	16.9%

NA indicates that data for owner-occupied units was not tabulated because the number of such units i small.

Source: Gruen Gruen + Associates based on 1970 Census Block Data

Neighborhood "A" has the highest percentage of single family dwellings and owner-occupied units of all of the six areas. However, the percentage of rental units is somewhat higher than the percentage of multiple units, indicating that many single family houses are being rented. This situation is seen in several of the other neighborhoods though it is clearly the largest in "A". This indicates a situation where property owners may be anticipating some change in the future. There is also a large percentage of elderly residents, many of whom are families who have been home owners in the area for a long time and some of these homes can be expected to change ownership in the near future. Some of the older, less well-maintained dwellings may be rented or subdivided into several units and rented, because of the high costs of repairing and remodeling older structures.

The average dollar value per room for owner-occupied units and the average rent per month per room for area "A" fall about in the middle of such amounts for all of the six areas. This indicates that residents are willing to pay more for units in "A" than in some of the other areas, but that there are also neighborhoods with units that are getting higher amounts. This indicates that there are other neighborhoods where either units of similar age and type to those in "A" are in better condition or units are newer than those in "A" and thus demand a higher price, and/or where there are other factors which make the other neighborhoods more desirable than "A".

Area "B" forms a long, narrow strip of units which are primarily in multiple family structures. Those few single family units that are included in "B" are owner-occupied homes. Rents per month per room are higher in comparison to the adjacent areas, "A" and "C". Nearly one-third of the residents are 62 years of age or older, the largest percentage of elderly residents in any neighborhood in this study area. There is also a low pereentage of younger residents and children

Area "C" has the highest valued homes though only 20 per cent of the housing units in "C" are owner-occupied. Rents are the third highest of the six areas, being just a little lower than adjoining area "B".

Neighborhood "D" is a densely populated, multiple family area with the highest rent per room. There are few residents under the age of 18 or over 62 years, indicating a large working-age population, many of whom may have chosen the area because of its proximity to the Pill Hill medical complex.

Neighborhood "E" has a large number of rental units, with an average rent figure that is quite low. Further, the value per room of owner-occupied units is the lowest of all the neighborhoods. The population of the area differs from neighborhoods "A", "B", "C" and "D" in that nearly one-third of the residents are under 18 years of age and almost all of the residents are black. Similarly the population of neighborhood "F" is largely black and is young. "F", however, does have a larger percentage of single family units. The area also suffers from a low rent structure but the value of owner-occupied homes is higher than in "E". It is important to note that both areas "E" and "F" have higher percentages of owner-occupied units than do all other areas except "A".

Therefore, by considering certain "key" indicators of neighborhood characteristics we can define six different subareas within which residential blocks exhibit similar population and housing characteristics. We can identify these subareas as individual neighborhoods. The average amounts of rent per room and value per room are extremely important indicators. As was explained in Chapter I, the price paid for housing is an indicator of the "quality" of the structure and its environment, together being the determinants of demand. Thus, the higher rent and higher valued units indicate a more "desirable" set of neighborhood attributes, and lower rent units indicate areas that are less "desirable". Further, rent per room is also an

important indicator of neighborhood stability. When low rent units are being rented by persons who are unable to pay any more for rent and have no other place to go, there is always a possibility that the landlord often will not be investing in that property and that maintenance standards will be low. This is particularly true if the number of overall vacancies among low priced units is not large so that landlords are not forced to compete for low income tenants through some investment in maintenance. Visable undermaintenance of some properties on a block tends to lower the obtainable rents of adjacent properties, making it more difficult for those owners to make improvements and the deterioration process continues to spread.

After examining all six neighborhoods, it is quite clear that the Grove-Shafter Freeway serves as a racial and economic boundary. Neighborhoods "E" and "F" vary significantly from areas "A", "B", "C", and "D". Home values and rents are lower in "E" and "F", residents are generally much younger, and the population is almost entirely black whereas about one-fourth of the population of"A", "B", "C", and "D" is black.

Having analyzied census block data to define and describe what appear to be separate neighborhood units, site visits were made to the areas and some interviews were conducted. Both Gruen Gruen + Associates and an appraiser for the Oakland Redevelopment Agency were involved in this effort. Interestingly enough, these visits readily confirmed the validity of the neighborhood analysis.

Property to the east of the Grove-Shafter Freeway appears to be more well-maintainedthan the property to the west. Further, maintenance in the western portion improves as one moves north from the MacArthur Freeway. On the east side, the property north of 40th Street appears better than the property to the south, and the area below the MacArthur Freeway seems to be influenced by the fact that it is adjacent to several hospitals and in all probability will

eventually be sold for medical related uses.

The only new residential construction within the six neighborhoods seems to be either the city-sponsored "turnkey" projects or some form of subsidized units. However, the newer units that one sees in the area are very unattractive. Most show signs of early deterioration and are poorly landscaped and maintained.

Describing the Social and Economic Characteristics of the Neighborhood Residents and Changes in These Attributes Since 1960

Additional information about the residents of the study area and its neighborhoods can be obtained by examining the census population data relating to social and economic characteristics. However, most of this information is only available by census tract categories. Fortunately, such tracts for 1970 do approximate our neighborhood boundaries but also generally include a larger area. Nevertheless, this data was examined and comparisons made between neighborhoods and with data for the city as a whole. Some general comparisons were also made between the 1960 and 1970 census reports. Unfortunately, the boundaries were changed quite dramatically between these years. Thus, comparable 1960 data had to be estimated.

The 1970 tract boundaries roughly correspond to these neighborhoods:

1970 Census Tracts	Neighborhood Areas
4011 + 4012	A + B + C
4013	D
4014	E
4010	F

Although it is impossible to separate data for each area, "A"

"B", and "C", our earlier analysis did show that these areas are similar. Information about them which can be approximated by combining tracts 4011 and 4012 should still provide useful information.

Total population of the entire study area declined from 1960 to 1970 due largely to the dislocation caused by the freeway construction. At the same time, a racial shift was taking place in that the white population decreased dramatically, approximately 46%, while the black population increased approximately 15%. This same trend was in evidence for the City of Oakland except that the white population declined by only 21% and the black population increased more rapidly by 49%. However, the percentage of black residents in the MacArthur population is much larger than for the city as a whole. Of further interest, the population of all other groups besides whites and blacks increased by 74% in the city, while it decreased in MacArthur by 11%. Thus, the population of all groups except blacks has decreased rapidly in MacArthur.

In all neighborhoods except "B" and "D" the number of family households exceeds the number of one person households. This can be explained by the large number of apartment units in each of these two areas. The difference is most dramatic in "D" where there are twice as many one-person households as families. These most likely include some medical personnel. It is also interesting to note that the number of families with children under 18 years of age as a percentage of all families in an area ranges from 30.7% in "D" to 47.0% in "E" while the city average is 45.5%. All areas except "E" have percentages that are below this city average. Thus, individuals and families without young children outnumber the families with young children which tends to indicate a certain degree of mobility for many of these residents. However, any supposed mobility factor is constrained by the degree to which racial and/or economic discrimination limit residential choice and to the extent that elderly persons are included.

Data relating to place of residence in 1965 confirms the above notion.

Table IV - 4

Place of Residence in 1965 as a Percentage of all MacArthur Residents in 1970 Who are over 5 Years of Age

Neighborhood	Percent in same house as in 1970	Percent in different house in SF-Oak. SMSA	Percent in different house outside of SMSA	Percent Abroad in 1965	Percent in different house with 1965 residence not reported
A,B,C	36.2	39.2	12.7	3.3	8.6
	49.2	24.8	16.1	3.9	6.0
D	27.6	35.0	15.7	4.3	17.3
E	50.0	29.8	7.5	.9	11.7
F	52.3	33.8	6.0	2.0	5.9
MacArthur Total	44.8	32.9	10.3	2.6	9.3
Oakland Total	46.9	31.0	11.4	2.4	8.2

Source: Gruen Gruen + Associates (based on Table P-2, Social Characteristics of Population: 1970)

Only 27.6% of the present residents of area "D" (4013) lived in that neighborhood in 1965 whereas 50% of "E" residents remain in that neighborhood. It is very interesting to note that at least 50% of the residents of both "E" and "F" had lived in those areas for five years or more prior to the 1970 census, while more of those on the other side of the freeway had recently moved into the area. It seems that many of "E" and "F" residents have remained in the MacArthur area because rents and home values are low there, and many are unable to find other units available at these prices. Further, it is also likely that many owners in the area have been unable to sell their homes. They, most likely, cannot find buyers at all or cannot sell at prices that will enable them to recover their investments. Thus, these signs of neighborhood stability are really indications of low mobility because of racial and economic reasons.

It is important to now look at income data to see if there are observable differences between neighborhood areas and to consider the significance of income data as it affects or is affected by any changes in the station area and as it relates to potential BART ridership. Median incomes by census tracts are shown in Table IV - 5.

In nearly all cases, median incomes are significantly below city-wide levels. The highest income area being 4012 which includes those areas of neighborhoods "A", "B", and "C" located nearest to Broadway. Family incomes in 4014 or "E" are the lowest, followed by area "D" and then area "F". Incomes of unrelated individuals are also the lowest in "E", followed by "D" and "F". Combining the two, "D" shows the lowest median income because there are a larger number of individual households in "D" than in the other areas. It is interesting to note that the MacArthur Freeway forms an income barrier in that median incomes for families and unrelated individuals are lowest in areas "D" and "E". It is surprising that incomes of individuals are so low in area "D" when rents are the

Table IV - 5

Median Income in 1969

For Families and Unrelated Individuals

MacArthur Area

Census Tract	Neighbor-hood	Families	Unrelated Individuals	Families & Unrelated Individuals
4011		$7526	$3241	$4767
&	A,B,C			
4012		8333	3529	5516
4013	D	7013	2611	3335
4014	E	5664	2436	3965
4010	F	7202	2694	4967
City-wide Medians		$9626	$3303	$6787

Source: Gruen Gruen + Associates (based on Table P-4, Income Characteristics of the Population; 1970, U.S. Census)

highest there. Perhaps the explanation may be that many rental units are occupied by unrelated individuals together. Further, the area included in 4013 includes blocks to the south of the Pill Hill area down to Grand Avenue. These blocks which are not included in our study area may be those with the lowest income residents.

A comparison of income changes from 1960 to 1970 shows that the MacArthur area "lost ground" in relation to median income city-wide. Median family income in 1960 for all five tracts together (estimated because of boundary changes) represented about 81% of the median income figure for the City of Oakland while the 1970 percentage has dropped to 73%. Of further interest is the fact that the present distribution of family incomes shows that the percent of families in the middle income levels is about the same in MacArthur as it is city-wide, and that the differences are in the two extreme groups, those with less than $5,000 income and those with greater than $15,000 a year.

Table IV - 6

Percentage Distribution of Family Incomes - 1969

MacArthur Area

Census Tract	Neighbor-hood	$5,000	$5,000-9,999	$10,000-14,999	$15,0
4011		31.4	44.0	16.6	8.1
&	A,B,C				
4012		26.6	33.1	25.9	14.4
4013	D	31.5	41.7	21.9	4.9
4014	E	41.1	39.8	14.3	4.7
4010	F	30.5	36.4	25.7	7.4
Total - MacArthur		32.3	38.5	21.5	7.7
Total - Oakland		21.5	30.7	24.7	23.1

Source: Gruen Gruen + Associates (based on Table P-4, Income Characteristics of Population: 1970, U.S. Census)

From Table IV - 6, it is apparent that the percentage of families in the lowest income bracket is 1.5 times higher than the percentage for the city. Neighborhood "E" has the largest percentage in the lowest category and the smallest percentage in the highest category, this latter percentage being about 1/5 as large as that for the city. Area "D" is the next lowest, but the number of families in "D" is also the smallest. As would be expected from the above analysis, areas "A", "B", and "C" have the smallest percentages in the lowest category and largest in the highest category.

It is now useful to look at gross rent as a percentage of household income for those households (both families and individuals) which do rent, in order to see the extent to which the lower income households pay an extremely large percentage of income for rent. From Table IV - 7 it is clear that the lowest income groups pay the highest percentage of income for housing. However, those neighborhoods with the most households in the less than $5,000 a year category, such as neighborhood "E", do not show the highest percentages of income spent on rent. This is because the rents are also the lowest in these areas. Correspondingly it should be noted that even though the rents are quite low, incomes are so low that residents still must pay a large percentage of this income for rent.

These figures may be also viewed as indicators of the "vitality" or "desirability" of a neighborhood. Because such a large number of units are being rented by poorer households, these figures are another indication that many residents have come to this area and continue to stay here because they cannot afford to go elsewhere. Thus, it is not the desirability of the area so much as it is the availability of units at lower prices that brings residents to the area and keeps them there. Such a low rent situation usually arises because of undermaintenance and the existence of this situation continues to encourage it further. This

Table IV - 7

Gross Rent as a Percentage of Income for

Lower Income Groups

MacArthur Station Area

Percentage Distribution of Renter-Occupied Units by the Percent of Household Income Spent on Rent if that Income is:

Census Tract	Neighborhood	Less than $5,000 per Year: % of Rental Units	% of Income for Rent: ≤24%	25-34%	35%+	$5,000 - 9,999 per Year: % of Rental Units	% of Income for Rent: ≤24%	25-34%	35%+
4011 & 4012	A,B,C	49.6	9.8	20.3	69.9	37.2	83.8	13.8	2.4
		47.5	3.2	13.6	83.3	34.8	75.1	22.6	2.3
4013	D	54.2	11.5	23.9	64.6	32.9	84.7	15.3	0
4014	E	63.6	12.6	19.9	67.5	26.3	81.4	13.9	4.7
4010	F	51.3	10.1	14.7	75.2	30.0	80.8	14.7	4.5
MacArthur Total		53.7	10.2	18.9	70.9	31.9	81.8	15.5	2.8
City of Oakland		43.8	10.6	18.1	71.2	33.6	71.7	22.0	6.3

Source: Gruen Gruen + Associates (based on Table 4 -2, Structural, Equipment, and Financial Characteristics of Housing Units: 1970, U. S. Census of Population & Housing

is the case for MacArthur where almost all of the rental units are older structures. Further, as deterioration becomes more extensive, the quality of the neighborhood often suffers both because of the physical deterioration and because of the undesirable physical appearance which affects one's perception and image of its vitality and limits further expectations for change in it. This situation, in turn, encourages undermaintenance and rental rates continue to drop to the level that is below that required to support new construction. When this happens, no new improvements will be made in the area to bring rents back up and to improve desirability. Thus as has been described, this is presently the situation in MacArthur neighborhoods "E" and "F", while pressures encouraging such a situation exist in some sections of the other neighborhoods as well.

Another important indication of an area's economic situation is to discover the sources of the income discussed above. Area "E" which has the lowest incomes, also has the highest percentage of families receiving welfare payments, 31%. Area "F" and the half of areas "A", "B", and "C" nearest to the Grove-Shafter Freeway have the next highest percentages on welfare with 21.5% and 23.0% respectively. Area "D" has 17.6% and the portion of "A", "B", and "C" nearest Broadway has the least with 13.3%. All these percentages except the latter are higher than that for the city which is 13.9%. Also, on "fixed" incomes are those families receiving social security payments. Areas "A", "B", and "C" have the largest percentages, with 28.8% and 38.2% of such cases, as would be expected because they have the largest number of elderly residents. Further as would be expected, "E" has the least of such cases (19.0%). Thus, about 50% of all families in each neighborhood receive either social security or welfare payments. These percentages do not indicate that welfare or social security are the only sources of income. In fact, approximately 80% of all families in MacArthur do have income from wages and salaries, and from 3.2% in area "E" to 8.8% in "A", "B", and "C" receive some income from self-employment. However, to remain

eligible for public assistance and social security, income re- ceived from these other sources must be low. Further, the median incomes discussed earlier are low, supporting the fact that regardless of employment income, a large number of fami- lies are financially dependent on social security and welfare checks. It will be very difficult for these families to in- crease their payments for rent or to increase their mainten- ance expenditures. Thus, given the present situation it is difficult to imagine that there will be a significant upgrad- ing of housing conditions in these areas.

Knowledge of where MacArthur residents work and how they get to and from their jobs gives an indication of present travel patterns in the area.

Table IV - 8

Place of Work as a Percentage of All Workers

MacArthur Area

Census Tract	Neighbor- hood	SF CBD %	SF Other %	Oakland CBD %	Oakland Other %	Alameda Contra Costa Counties (non-Oakland) %
4011 & 4012	A, B, C	5.0 8.4	5.7 3.8	6.8 7.9	48.0 40.1	22.6 27.8
4013	D	4.7	3.0	6.7	47.0	21.1
4014	E	2.5	4.2	1.3	37.8	19.2
4010	F	2.2	5.4	5.5	45.3	24.6
Total - MacArthur		4.0	4.6	5.5	43.9	21.1
City of Oakland		4.0	6.1	7.7	43.9	23.1

Source: Gruen Gruen + Associates (based on Table P-2 Social Characteristics of the Population, 1970 U.S. Census)

The number of residents working in either the San Francisco CBD or the Oakland CBD is low except for tract 4012 which is the half of "A", "B", "C" that is along Broadway. The percentage of such workers is larger than the percentage for the city as a whole. In all cases the largest number of workers are employed elsewhere in Oakland and about one-fourth work in other areas of Alameda and Contra Costa Counties outside of Oakland.

A review of Table IV - 9 shows that the percentage of MacArthur workers in all neighborhoods who drive their own cars to work is lower than that percentage for the City of Oakland, while the percentage of workers who take public transit in MacArthur is much higher than is true for Oakland.

Most likely, some workers do not have cars available. In fact, the percentages of households without an automobile are much larger in MacArthur than for the City of Oakland. They range from 35.3% in 4012 to 44.7% in area "E" to 49.9% in area "D".

It is interesting that the percentages in Table IV - 9 show that 62.0% of workers in "E" drive their own cars to work while 44.7% of all households do not own automobiles. Most likely, many of the residents of these households do not work. However, the percentage of auto drivers in "E" does seem surprisingly large for such a relatively poor area.

Also of interest is the fact that such a large percentage, 28.3%, of workers in "D" walk to work. This confirms an earlier conclusion that some "D" residents do work in the Pill Hill medical complex and probably chose to live in MacArthur because of its proximity to their jobs.

<u>Analyzing the Existing Commercial</u>
<u>Activities in the Area</u>

There are four major commercial streets in the study area, all of which have strip commercial development; Grove Street run-

Table IV - 9

Means of Transportation to Work as a Percentage of All Workers

MacArthur Area

Census Tract	Neighbor-hood	Private Auto (Driver)	Private Auto (Passenger)	Public Transit	Walk	Work at Ho[me] & Oth[er]
4011 & 4012	A,B,C	47.7	11.2	26.2	9.3	5.6
		49.9	8.0	26.9	7.7	4.5
4013	D	33.0	5.9	24.6	28.3	8.2
4014	E	62.0	12.1	17.5	6.1	2.3
4010	F	57.8	9.6	24.5	4.6	3.5
Total-MacArthur		51.9	9.6	24.3	9.7	4.5
City of Oakland		62.5	9.8	16.5	6.8	4.4

Source: Gruen Gruen + Associates (based on Table P-2, Social Characteristics of the Population: 1970, U.S. Census)

ning north and south on the west side of the Grove-Shafter Freeway, Telegraph Avenue and Broadway running north and south on the east side, and West MacArthur Boulevard running east and west through both sections. There is also the Pill Hill medical complex area, a circular agglomeration of medical offices and hospitals in the south-eastern corner of the area, and a minor commercial and medical strip along 40th Street between about Shafter and Broadway.

The BART station and the Grove-Shafter Freeway are located between two of these major streets, Telegraph and Grove. Just like the residential neighborhoods in which they are located and which they serve, these streets differ as to the level of activity and types of establishments located on them. Activity along Grove Street is marginal and tends to be locally oriented. Some structures are quite run down, many lots stand vacant, and the general impression is of a declining area. Shops are small and cater mainly to the local neighborhood. The establishments between 34th and 44th Streets include several beauty salons and a barber shop, small neighborhood restaurants, realtors, auto repair and servicing establishments, household repair and cleaning shops, and a few liquor stores.

Telegraph Avenue on the other hand, generally developed with larger and somewhat newer establishments. The apparent continuing vitality of the street is related to the fact that there is more purchasing power in the adjoining neighborhoods than is true along Grove Street and to the fact that this section of Telegraph Avenue is assisted by its close location to the more well established Temescal shopping area which does draw customers from a larger market area which includes parts of the Rockridge, Temescal, and MacArthur areas.

Many of the establishments along Telegraph are automobile-oriented. The area is easily accessible by car and parking

is available. Between 34th and 45th Streets, the establishments include several service stations, many restaurants, several of which are of the quick-stop, drive-in variety, a supermarket, beauty salons, several cleaners, a furniture store, a liquor store, and other convenience-type establishments. Generally, these are designed to serve the adjacent neighborhoods, and to attract motorists who pass through the area. Though some of the stores and restaurants are attractive and have been remodeled; the general appearance of much of the street is of an older commercial strip with many older buildings. It seems to lack the vitality and design of a more thriving area and some of the structures show signs of undermaintenance.

West MacArthur Boulevard forms the third major commercial area. Unlike Telegraph and Grove, MacArthur runs east and west through the neighborhoods on either side of the Grove-Shafter Freeway and like the neighborhoods through which it passes, the condition and intensity of commercial development on the eastern end near Mosswood Park and Broadway differs from that on the western end beyond Grove Street.

The establishments all along this street are primarily gas stations and motels which are relatively small (50 rooms or less) and range in quality from fair to very good. Throughout the street, and especially on the western end, development is interspersed with housing units which are in fair condition.

Towards the eastern end of the street near Broadway there is the modern, attractive AAA office building. Mosswood Park offers an attractive setting to the area at this point. At the intersection of Broadway and West MacArthur there is the MacArthur/Broadway Center which includes retail stores and some offices. Across from this center is the Kaiser Hospital which draws patients from the entire East Bay Area. At this point, Broadway forms a kind of boundary line between the commercial areas on either side of it. The MacArthur/Broadway

Center and development east of it begin to take on the "character" of the Piedmont area to the east.

About one block south of this intersection is the Mosswood Park Office Building which was built in 1969 on property adjacent to the park. Tenants in this building include individuals and firms which generally serve a regional market. Among the tenants in the building, insurance companies predominate and the Internal Revenue Service occupies a large amount of space, using four floors. Other offices include real estate firms, regional representatives of manufacturing concerns, an attorney, a doctor, marketing consultants, and a finance company. Thus, the character of this part of Broadway takes on a much different character than do the other commercial streets within the area. Though the mixture of activities in these several blocks is quite diverse, together they provide a major concentration of employment with over 2500 people working at the Kaiser clinic and hospital, the MacArthur/Broadway Center, and the Mosswood Park Building. Add to these the numbers of shoppers, patients and visitors, clients, and people coming to the AAA office and this corner becomes the center of quite a lot of activity each day. Further, this is the only commercial area in MacArthur which has experienced major new construction in the last several years.

Moving north on Broadway, the establishments along that street include several automobile repair shops and gas stations, real estate and insurance offices, cleaners, restaurants, liquor stores, a supermarket, beauty shops and a barber shop, women's clothing stores, drug stores, a sign company, an upholstery shop, a data processing office, electrical appliance and television and radio shops, a paint store, a construction company, and a wholesale furnishings and design store. Thus, there is a mixture of office, convenience-type retail, and community-wide repair and more specialty retail outlets. Though there is no clear cut pattern, it appears that the smaller offices and auto

servicing establishments are nearer Mosswood Park, the more convenience-type retail stores serving both local residents and people passing through the area come next as one moves north, and then the repair and supply stores are next, nearer to 43rd and 44th Streets.

In addition to these major commercial streets, the Pill Hill Medical Center area located below the MacArthur Freeway and between Broadway and Telegraph Avenue is a major medical office area that serves the entire East Bay, including both Alameda and Contra Costa counties. Included on the hill are Merritt, Peralta, and Providence Hospitals, numerous doctors' offices, and medical office and training facilities. The area has become very much of a specialized medical center where care and treatment is available from all medical specialties and where some research and study is being conducted. Primarily the medical complex emphasizes secondary level care with some primary care (family physician and emergency room) and some tertiary care (open heart surgery, extended cancer work, and others) being given. The main advantage of the hill area is the availability of a large number of medical professionals and services in one central place.

However, the future of the area is inextricably tied to a coordinated planning effort between all of the hospitals and physicians involved and to the future socio-economic and physical character of the adjoining neighborhood. The present hospital capacity is more than adequate for acutely ill in-patient care and often duplicate facilities and services exist. However, as many in the working age population migrate to the suburbs and establish new ties with suburban doctors and hospitals, an increasingly large portion of the Hill's potential service groups will include more people with a high level of dependency on social services. At the same time, whether due to real or imagined trepidation concerning the area, many of those who now seek medical care on the Hill may be looking elsewhere for such services.

Further the Hill must continue to attract young doctors. Presently, there is some research and there are leaders in the specialty areas such as cancer research and orthopedics programs. Thus, stimulation of research and the establishment of more outreach facilities, with some pioneering in clinical medicine, are important additions to the area in the near future to attract the younger, more "socially concerned" doctors. These types of programs will require increased coordination and cooperation of all hospitals and doctors. There have been many studies recommending this approach, even to the extent of a corporate merger between hospitals, and many ad hoc committees and groups formed to begin the coordination effort.

Of real importance to this study are the changes in land use that could occur if the medical facilities in the area expand. If cooperation between the four hospitals in the area, the three presently on the Hill and Children's Hospital (currently in the north-western corner of the MacArthur study area), continues, expansion on the Hill could include the addition of Children's Hospital, the addition of medical office space as the trend for doctors to locate near to hospital facilities continues, the addition of some apartment complexes including some facilities expressly for the elderly, as well as some hotel-type lodging for guests and families visiting medical facilities in the area. There has been some planning for a future U.C. Berkeley medical program which would use Pill Hill for training and internships. Though such a plan would be quite an important addition to the area, its chances for success in the near future are not too encouraging in the light of the present lack of funds at the University for such programs and because of the fact that U.C. is presently developing medical schools on three of its other campuses.

Therefore, the future demand for office and retail space in MacArthur is directly related to the regional and city-wide demand that can be captured in the area as additions to and because of the existing agglomerations of medical and secondary

office space which now exist there. Increases in future demand will be generated by the neighborhood only to the extent that neighborhood demand can enhance that which already exists without it. Rents in the area substantiate this relationship. Along Telegraph Avenue and especially Grove Street, rents are quite low. On Telegraph, office space on the average now rents for about $.20 a square foot and on Grove these rents are around $.15 a square foot, though there is very little real office space available. Retail rents are generally about the same and fluctuate according to the condition of the building. There are some empty stores and several vacant lots along Grove, West MacArthur, and a few on Telegraph. Rents on Broadway excluding the Broadway/MacArthur Center range from $.20 - $.35, depending on the structure and the location. Office space in the Mosswood Park Building runs from $.54 - $.58 a square foot and the same rates are generally true for newer structures in the Pill Hill area, though units may be higher because of the specialized facilities required. Retail rents in these areas are generally a little lower than those for office uses. Thus, the demand for space as evidenced by current rents, is now low in those commercial areas which are designed to essentially serve only the local market. As is true for residential land uses, the existing demand which is a reflection of the "quality" of an area or a particular location, is also the market force which determines the improvement, stability, or deterioration of that "quality" in the future, assuming no significant public actions to encourage or counteract existing trends.

THE IMPACTS OF BART IN THE MACARTHUR NEIGHBORHOODS

It is now important to identify the types of impacts that the BART system will have in the neighborhoods as identified. It will be the interaction between the following BART impacts and the existing neighborhood attributes that will cause changes in the demand for future development and in the land use development potentials for the area. This process will then, in turn,

lead to changes in the future social, economic, and physical characteristics of the area. The direct BART impacts that will be considered are those that were explained and discussed in Chapter I.

A Reduction in Space Impedance

The most dramatic effect that BART will have on future land uses in the area will be by reducing the time-space relationships that confront both existing and would-be travelers in the MacArthur area. The effects of any rapid transit station will be greatest if its location is such that it can enhance existing travel patterns in the area, encouraging the development of residential land uses for residents who will use the system to commute to and from work and encouraging the development of office and commercial facilities by linking the BART system to the existing agglomeration of such activities and thus strengthening its attraction.

The MacArthur station is located in the median of the Grove-Shafter Freeway between 40th Street and MacArthur Boulevard. Its orientation toward the east side of the freeway is extreme. Access to the station is from 40th Street on the east side through a plaza under the freeway structure. The entire parking lot is also on the east side facing Telegraph Avenue. The station has the advantage that almost all BART lines stop there, thus causing it to serve as a major transfer point. Peak travel time is four minutes to downtown Oakland (12th Street Station) and 13 minutes to the Montgomery Street Station. The present estimate of daily patronage in 1975 when the system is fully operating is for 7,346 total trips, about half of which are to be attractions and half productions.

Our analysis earlier in this chapter showed that few of the present residents in neighborhoods "E" and "F" actually work in downtown Oakland or San Francisco. Further, the incomes of many of these residents are quite low indicating that money

available for travel on BART is limited. Rents and house values in the area are also low while a need for such lower priced housing continues to exist. Thus, for these and all of the reasons discussed earlier, the kinds of people who will continue to be attracted to much of this area will be those looking for shelter housing at reasonably low cost. These will not be the kind of people who will be attracted to the area because of BART or who will use BART to any significant degree. Further it is difficult to even perceive the existence of the BART station from neighborhoods "E" and "F" because of its extreme orientation to the other side of the freeway. The station will also not have any real impact on the Grove Street commercial areas, because of this visibility problem, because there will be no major changes in the neighborhoods which would support changes in the commercial facilities, and because there is not a strong agglomeration of activities there now which would attract people into the area.

There may be some desire on the part of residents on this west side to use BART for daytime shopping trips. Many residents in these areas and in the neighborhoods just below Market Street now go to Berkeley and El Cerrito Plaza to shop, and transportation is a problem especially for the elderly residents and those without cars. However, it may be difficult for these people to get to and from the BART station. Crime and the fear of it often discourage people from walking in the area, and the existence of the huge freeway structures crossing 40th Street make it necessary to walk through this dark, vast expanse of overcrossing to reach the station. Bus service to and from the station during the day would encourage use except that such a service does add to the total cost of the trip.

The situation on the eastern side is much different. As was discussed, there are more people who work in San Francisco and Oakland and who could afford to use BART to make these work trips. Further and even more important, there are many people who live in the areas across Broadway toward Piedmont who could use this station for commute trips.

There are also a large number of people who come into the area each day to visit the Pill Hill area, Children's Hospital, and the facilities in the vicinity of the MacArthur/Broadway intersection. These travelers include employees, visitors, patients, and shoppers, all of whom could benefit from the time-space savings of BART. Presently, parking in the Pill Hill area especially is very limited. Thus, the provision of a convenient feeder bus service which would link the station to these existing agglomerations of activity will be necessary to maximize the usage of the station and to increase the desirability of the existing areas. Such a plan would make the Pill Hill complex and the Kaiser Hospital easily accessible from areas throughout the East Bay. Further, residents in the area could also use the shuttle making it easier for patients from Oakland and throughout the East Bay to reach the Pill Hill area which on foot entails a steep climb.

Such a plan for tying the station to the existing activities on Broadway and on Pill Hill, and a plan which would increase accessibility to the station from the Piedmont areas, would stimulate traffic through the MacArthur area and would encourage development of some convenience stores and restaurants at the station and along the route. Perhaps the most likely pressure for such development will come in the strip along Telegraph between the BART parking lot and the street. Increases in demand along Telegraph will probably only be felt in that block and at the intersections on either end. Contrary to BART staff forecasts that 34.2% of all patrons will walk to and from the station, 53.5% will use feeder transit, 6.1% will come via kiss and ride and 6% will park their automobile at the station, it is more likely from our analysis to assume that a larger percentage than BART has forecast will come to the station via kiss and ride and feeder bus and fewer than 34% will walk. Our analysis concludes that the great bulk of patrons will come from the surrounding areas to the east to use BART to leave the area or will come into the area from other east bay locations. Thus the

provision of a feeder bus service and of environmental improvements along the major arterials will improve the image of the area and increase accessibility and thereby increase both BART patronage and the potential for new development and for the improvement of existing facilities for those properties adjacent to the station, those along the major travel routes and those at the existing agglomeration points. However, it is likely that these types of improvements and services will have to be provided by the city as a move to enhance the potential for future private involvement in the area.

Secondary office and residential development could then locate either in the two main areas of existing activity, along the route of the shuttle bus, or in the immediate area surrounding the station. The existence of such a shuttle bus scheme to tie the area together would encourage development at such locations. The combined attraction of the existing agglomerations will be greater than the attraction of each one alone. Such a bus service may also make it more desirable for residential development in the area as well. Apartment complexes are now under construction in the MacArthur/Broadway area, both near the Broadway/MacArthur intersection and to the east of it. Though these social areas are somewhat different from those that we studied and the potential for new development was already greater there, accessibility via BART did provide some psychological impact to add to the final decision to build there and this accessibility has been a component of advertising efforts.

Therefore the demand for non-hospital uses is not sufficient to increase the amount of space without a shuttle system to link existing activities to the station. Without such a service, the space impedance impacts of the system will be minimal. For those areas which already show potential, a direct link to the regional transportation system will

enhance that potential. Thus as already stated the nature of the change which will affect demand is directly related to the existing social, economic, and physical land use forces. Therefore if the MacArthur station had been located on Broadway the impedance impacts of the system would be much greater. The proximity of the station to the existing activities along Broadway and to the east of it nearer to Piedmont would greatly enhance existing travel patterns there, encouraging development by directly linking the BART system to the existing agglomeration of activities and thus strengthening the attraction there. Because of the present location, additional investment will be necessary to try to link the system to the strongest existing attractions in the area if significant space impedance impacts are to be realized.

Advertising Impacts

A second type of impact which is very important to the commercial activities in the area relates to changes in traffic flows which will alter the visual exposure of certain commercial locations. In MacArthur, the most dramatic impact will be at the block of Telegraph Avenue immediately adjacent to the BART parking lot. All travelers who will come to the station will see that area and many will physically pass by it. Development on those sites should have double exposure so that it faces the BART station as well as the street. An attractive frontage in this direction would be important to encourage patrons into these establishments.

However, the advertising value of that location is directly related to the number and the disposable income of those who will walk or ride by it. Our analysis did show that the disposable income of the residents in the immediate station area is not high. Thus, the real advantages of the location relate to the number of people who will come into the station area from outside MacArthur. As was just discussed, these will be primarily people coming from areas to the east and south-east,

and those coming to the existing agglomeration of activities on the eastern fringe of the study area. Their numbers will be directly related to efforts to tie these eastern areas to the station and to the intensity of development at these outer sites. If a shuttle bus system is functioning well, there will be advertising impacts at all locations along the bus route, and especially if the system enables passengers to stop along the way.

Window advertising impacts from the BART cars themselves will be unimportant in this area unless the unattractiveness of the structures along the route discourages visitors and travelers from coming to the area. Such impacts will be discussed below.

Boundary Impacts

The boundary impacts within the MacArthur area are extreme, but relate primarily to the existence of the freeways in the area rather than to the BART tracks which comprise only a minor portion of the huge concrete freeway structures. The social area analysis conducted earlier clearly indicates that the freeway forms a social, economic, and racial barrier throughout the area. The extreme eastern orientation of the BART station will serve to increase the separation of the neighborhoods on either side of it.

This boundary impact will serve to make the division between neighborhoods a clearer one. It may make it possible for neighborhoods "A", "B", "C", and "D" to become associated with the "image" of the areas to the east rather than with neighborhoods "E" and "F". This impact will help in raising expectation in "A", "B", "C" and "D" and in improving their image. However, this same phenomenon will serve to make areas "E" and "F" seem more like the "wrong side of the tracks" and will lower expectations there. If deterioration and the social and economic problems in these areas are allowed to increase, the situation may begin to have a negative impact on the station area, influencing the image and safety of all of the areas.

There is also a danger in that the link between BART and the Broadway areas will not increase the demand to the point where obtainable rents will be great enough and other improvements will be made in the neighborhoods between these two points. If this is the case deterioration may continue in the neighborhoods forming a kind of boundary impact which will begin to discourage travel through them. Presently, the conditions in these areas is such that either public and private developments or improvements could enhance the area and decrease the potential for this type of boundary impact.

However, the costs of such a program, which were discussed in Chapter II may make it prohibitive for the private market to do such actions. Our analysis in Chapter VII will determine this.

Physical Environment Impacts

Like the boundary impacts, the freeways are much more significant in causing changes in the physical environment than is BART. Noise and automobile pollution directly affect those portions of the neighborhoods that are adjacent to the freeways. Further, traffic because of BART will increase both from the increased number of automobiles and the frequency of buses. Further study would be needed to discover if the streets and parking facilities in this station area are presently adequate to handle traffic increases.

The dark, dingy areas under the freeways and the existence of these massive concrete structures decrease the "visual quality" in the area. However, planting along the tracks and below the freeways has helped to ease this impact. Because of the massiveness of concrete which still exists and the visibility of older deteriorating wood frame structures at many locations throughout the neighborhoods and from the freeway and the BART tracks, future development, especially in the immediate area

of the station and between the station and Broadway and Pill Hill, should be very attractive so as to improve the visual amenity level and general environmental quality.

Disruption Impacts

The act of building such a system does disrupt the pattern of activity in the local area. In this case, much disruption was caused by the clearance of many residential units to make way for the freeway. Further, this building process disrupted the patterns of activity previously established in the area. It is clear that the disruption was permanent since the freeway remained as a physical barrier and housing units were not replaced.

CHAPTER V

The Demand Effects of the BART System in the Rockridge Neighborhoods - A Micro Analysis

Following the framework of Chapter IV, this chapter discusses the effects of BART in the second station area included in this study. As was previously discussed, the demand for space around the Rockridge BART station is a function of the interaction of the impacts of the BART system with the social, economic and physical attributes of each of the component neighborhood areas and of the overall demand for space in Oakland. Having discussed the overall or macro demand in Chapter III, it is the purpose of this chapter to identify and describe the various component neighborhoods of the Rockridge study area, to describe the interaction of the BART system in the context of each sub-area so as to identify the types of impacts which will result, and to predict the direction and the magnitude of changes in the demand for space in each neighborhood in terms of the obtainable rents. The first section of this chapter summarizes the demand effects and presents estimates of obtainable rents after BART impacts. The rest of this chapter summarizes the research done to identify and describe the social, economic, and physical attributes of the study area and the types of impacts created by the introduction of the BART system.

A SUMMARY OF THE DEMAND EFFECTS

The demand effects of the station's construction and operation are a function of the extent to which BART impacts change the relative desirability of the area to the consumer groups that constitute the market for residential space and for the services of those who rent or buy commercial space. After analyzing the existing socio-economic and physical conditions within the Rockridge study area and estimating the types of impacts that BART has had and will have on that area, it is possible for

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Gruen Gruen + Associates to estimate the effects of these impacts on demand as they interact with existing conditions in the various neighborhoods and to express these effects as the level of obtainable rents for both residential and commercial land uses.

These rents are given in Tables V - 1 and V - 2 and represent the amount of contract rent that will be obtainable for new construction after BART impacts in each of the separate neighborhood social areas that will be described in detail throughout this chapter. In each case, rents are estimated by quality of construction and size and type of unit. Estimated sales prices for single family units in each neighborhood are also included.

In general the forces at work are such that BART impacts will enhance an already desirable area, increasing its relative quality and thereby increasing the demand for housing and commercial space. The result of this increased attractiveness when considered in terms of the alternatives that confront demanders of space determines that the rents which can be obtained for new construction in Rockridge will increase from the levels in effect before BART impact.

Rents to the east of College Avenue and to the southeast across Broadway, in neighborhoods "A", "B", and "C", will continue to be higher than those to the west of College Avenue, and the desirability and attractiveness of those areas for residential uses will be increased by BART impact. Those neighborhoods just west of College Avenue, "D" and "E", will experience some increased demand although pressures for deterioration and neighborhood change coming from their west and northwest boundaries along Telegraph Avenue and Claremont Avenue must be controlled so as not to negate any potential increase in demand or to cause demand to decrease from the present level. Because of distance from the BART station and because of the existing socio-economic characteristics there,

Table V - 2

Forecasts of

Obtainable Monthly Rents ($) and Sales Prices ($)

Per Residential Unit After BART Impact

Rockridge Station Area

Neighborhood	Const. Type	Single-Family Dwellings		Wood Frame Const. Apartments				High Rise Const. Apartments			
	(Sq. Ft.)	1500	2000	650	800	1000	1200	650	800	1000	1200
A	Good	52,000	60,000	230	280	350	400	250	300	375	425
	Average	43,000	50,000	200	240	300	320	220	260	330	360
B	Good	40,000	48,000	200	250	320	370	225	270	340	380
	Average	33,000	40,000	190	230	290	330	200	245	300	340
C	Good	50,000	60,000	230	280	350	400	250	300	375	425
	Average	40,000	50,000	195	240	300	320	210	260	330	360
D	Good	34,000	40,000	190	210	270	310	210	230	300	340
	Average	28,000	32,000	170	190	240	280	190	200	250	300
E	Good	35,000	42,000	200	230	270	320	220	260	310	350
	Average	30,000	37,000	180	200	230	290	200	240	270	320
F	Good	32,000	38,000	190	210	270	310	210	230	300	340
	Average	28,000	30,000	170	190	240	280	190	200	250	300
G	Good	32,000	38,000	180	200	250	290	195	220	260	310
	Average	28,000	30,000	160	185	220	260	170	200	230	280

Source: Gruen Gruen + Associates Estimates

Table V - 2

Forecasts of

Obtainable Monthly Rents Per Square Foot of Commercial Space After BART Impact

Rockridge Station Area

Major Street	Cross-Street Boundaries	Retail Rents	Office Rents
College Avenue	63rd and the Grove-Shafter Freeway	\$.30-.40	\$.35-.50
College Avenue	Grove-Shafter Freeway and Broadway	.25-.35	.30-.45
Broadway	Vicinity of College Avenue Intersection	.25-.30	.30-.40
Claremont Avenue	Vicinity of College Avenue Intersection	.25-.35	.30-.45

Source: Gruen Gruen + Associates Estimates

neighborhoods "F" and "G" along Telegraph Avenue and in that corner of the study area near to the Berkeley border will not experience significant changes in demand as a result of BART impacts.

Like housing, the demand for commercial space will increase. The demand for both office and retail space along College Avenue north of the BART station will increase the most and will continue to be greater than demand along College south of the station. Rents for those properties immediately adjacent to the BART station and those near the intersection of College and Claremont Avenues will increase the most although increases in traffic and activity throughout the area will favorably affect general demand for commercial space all along the street.

It is important to note that these rents and prices are for new construction in the neighborhoods given the existing social, economic, and physical attributes described in this chapter, and after the BART system is in full operation.

The question of the length of time until "after BART impact" cannot be answered with perfect exactness since it will depend on the length of time needed for the BART impacts to be fully recognized in the particular areas under construction. Thus, when we are referring to rents and sales prices that will come into effect after BART impacts we are essentially saying that length of time that is required for the impacts to become discernable and the market to react to that discernment. In other words as was explained in Chapter IV they do not include the interim market testing and reaction times during which people test the market, acting upon their beliefs of what kinds of impacts BART will have and to what extent these impacts will affect demand. An example would be the period of time after some new apartment units are constructed and filled, thus encouraging further construction, not the initial period during which the market is being tested by pioneers.

Furthermore, the confirmation of demand attractions that will be provided by initial construction will tend to hasten the evolution pattern. As new construction and other improvements begin to change the existing social area, the forecasted rents and prices will also change. Thus, our forecasts will no longer apply as soon as there is enough new development to change the characteristics of the existing neighborhood social area. This is also true where we are forecasting that demand will not change. If no action is taken there may be an increasingly greater depressing effect felt after it becomes clear that the introduction of BART has not caused any new private development.

THE SOCIAL, ECONOMIC, AND PHYSICAL ATTRIBUTES OF THE INDIVIDUAL NEIGHBORHOOD AREAS

It is necessary to analyze the social, economic, and physical attributes of the existing environment into which the possibility for change in the form of a new transit system is being introduced. It is not possible to predict the nature of the impacts or changes which will result from the system without knowledge about the present population in the area and about the factors which affect the area's desirability and livability as a residential and commercial area, and without an understanding of past trends and present pressures for change in the nature of the area and its residents.

Defining and Describing the Component Neighborhoods

As was described in Chapter I, a neighborhood can be defined as a group of spatially-clustered dwelling units that share a very similar set of demand-differentiating attributes. Because this definition may not conform to census tracts or other common forms of collecting data, it is necessary to analyze data for each residential block so as to discover those blocks which include dwelling units which have similar attributes and which together make up the existing neighborhood subareas within the larger Rockridge study area. Gruen Gruen + Associates analyzed U.S. Census block data relating to pop-

ulation and housing characteristics and identified seven such individual neighborhoods.

The map in Figure V - 1 defines the boundaries of each neighborhood identified by the letters A through G, and the data in Table V - 3 describe associated demographic and housing characteristics. These data items are descriptive indicators of the nature and "quality" of each neighborhood area. A comparison of these items between individual neighborhoods, especially those which are adjacent to each other, gives an indication of existing pressures for change. For reasons which will be explained throughout this chapter, the data items which are the most significant indicators of neighborhood "quality" are the following:

*Average value per room and the percentage of single family and owner-occupied units.

*Average rent per room per month and the percentage of multiple and renter-occupied units.

Fifty-six per cent of the dwelling units in neighborhood "A" are owner-occupied and their average value per unit and per room is the highest in the Rockridge area, indicating the relative desirability of this neighborhood over the others in the area. Further, the units in "A" appear to be the largest within the area. The percentage of rental units is nine per cent larger than the percentage of multiple units, indicating that some single family houses are being rented. This situation indicates that some property owners may be anticipating some change. About one-fifth of the population in "A" includes residents over sixty-two years of age and another one-fifth are under eighteen.

Although located adjacent to "A", the housing characteristics of neighborhood "B" differ from "A". Fifty-one per cent of the dwelling units in "B" are single family homes and 44.7%

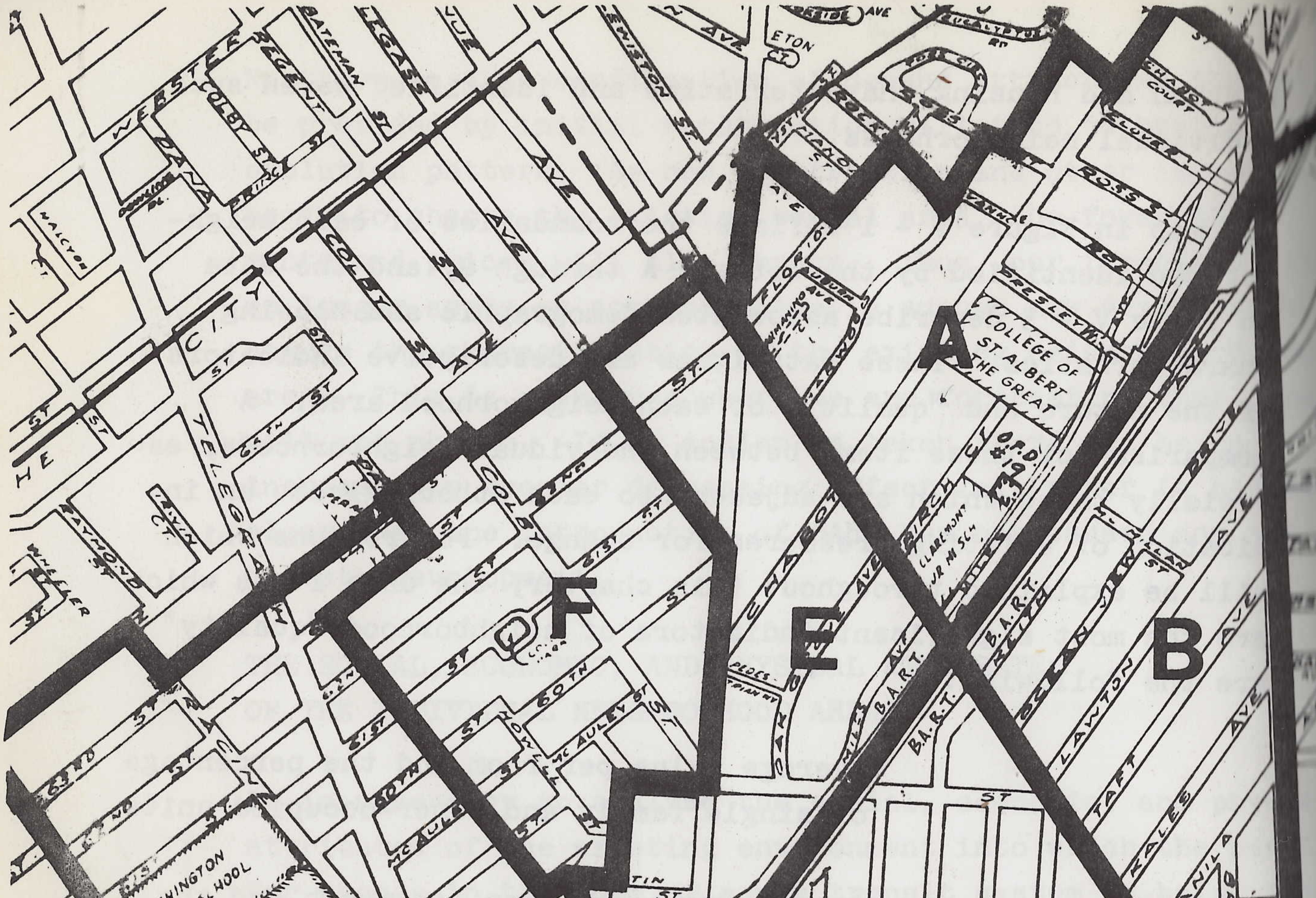

Figure V-1 **NEIGHBORHOODS BASED ON SOCIAL AREA ANALYSIS**

Rockridge Station Area

Table V - 3

Population and Housing Characteristics by Neighborhood

Rockridge Station Area

1970

Neighborhood:	A	B	C	D	E	F	G
No. Units per Neighborhood	468	771	479	1,044	607	536	1,431
Average # units per block	42.6	77.1	31.9	45.4	67.4	38.3	43.4
% Single Family	65.3%	50.7%	66.0%	64.9%	29.2%	70.2%	38.2%
% Multiple	34.6%	49.3%	34.0%	35.1%	70.8%	29.9%	61.8%
Average # occupied units per block	40.9	74.4	30.9	43.3	66.1	36.9	40.0
% owner-occupied	56.4%	44.7%	61.6%	50.5%	25.4%	62.2%	31.8%
% renter-occupied	43.6%	55.2%	38.4%	49.5%	74.6%	37.8%	68.2%
Average $ value - owner-occupied	31,260	23,600	28,190	20,370	25,220	20,930	21,940
Average $ value per room	4,790	4,010	4,510	3,700	4,390	3,540	4,050
Average$ contract rent per month	144.20	116.00	192.70	112.70	115.30	118.60	107.50
Average$ contract rent per month per room	38.40	32.30	47.50	29.60	34.80	27.13	28.50
Average # rooms/unit - owner-occupied	6.52	5.88	6.25	5.51	5.75	5.91	5.41
Average # rooms/unit - renter-occupied	3.75	3.59	4.05	3.80	3.32	4.37	3.77
% black owner-occupied units	1.1%	1.2%	.4%	3.4%	2.1%	24.2%	15.4%
% black renter-occupied units	1.5%	3.4%	0%	3.0%	6.0%	13.9%	28.7%
Total population	1,139	1,657	1,200	2,178	1,134	1,457	3,182
% black	1.8%	2.0%	1.5%	10.2%	10.6%	50.3%	52.6%
% under 18	22.3%	23.4%	19.3%	19.3%	17.1%	32.0%	23.9%
% 62 and over	21.0%	22.7%	31.1%	20.7%	24.4%	13.1%	16.1%

Source: Gruen Gruen + Associates based on 1970 Census Block Data

of all occupied units are owner-occupied. Rents and house values per unit and per room are lower than those in "A" and they fall in the middle of the rents and values for the seven Rockridge neighborhoods. Dwellings are also somewhat smaller on the average than units in "A". In general, the data would indicate that "B" is not as desirable a neighborhood as "A". However, the racial and age characteristics of the population in "B" are very similar to those in "A".

Neighborhood "C" is very similar to "A" though it is separated from it geographically. House values are a little less in "C" while rents are the highest of all seven neighborhoods. In fact, rents are significantly higher indicating that many of the rental units in "C" must be newer, more modern units than those in the other areas. A majority of units, 66 per cent, are single family and 61.6 per cent are owner-occupied, showing that relatively few such units are being rented. The area has the smallest percentage of black residents, only 1.5 per cent, though the percentages for "A" and "B" are also low. Almost one-third of the residents are sixty-two years of age or older and less than one-fifth are under 18. Thus, there are relatively few younger people and more older residents than in any of the other neighborhoods. This indicates that ownerships of some single family units may change in the relatively near future.

The average value per room of dwelling units in neighborhood "D" is the second lowest within the study area and the average rent per room per month is the third lowest. Further, while about 65 per cent of the units are single family, 50 per cent are owner-occupied indicating that almost 15 per cent are being rented. This percentage is clearly the largest and along with the lower values and rents indicates instability and likely change in this neighborhood. The black population is larger in "D" than in "A", "B", or "C". There are fewer older residents and younger people, showing a large working age population.

Neighborhood "E" has the largest percentage of multiple and renter-occupied units. It also has the lowest percentage of single family units which are being rented. Rents and values are relatively high, being third highest in each case. Like "D" the population of the area is approximately 10 per cent black. There are slightly more older residents, the second largest percentage of all areas and somewhat less younger people, having the lowest percentage.

Unlike "E", which is adjacent to it, neighborhood "F" has the largest percentage of single family and owner-occupied units. "F" further differs from "E" and from the other Rockridge neighborhoods as well, in that rents and values in "F" are the lowest. This indicates either that units in "F" are older and less well-maintained than units in the other areas, that the amenity level of the neighborhood is below that of the other areas, or that because of a combination of both of these situations, the environment in area "F" is not as desirable as in the other neighborhoods in Rockridge. The population of "F" also differs from that of the other neighborhoods. There is a large percentage of young residents under eighteen years of age, nearly one-third, and a relatively small percentage, 13 per cent, of residents over sixty-two, indicating a large number of family households. Further, one-half of the population is black, a significantly larger percentage than is the case for the five areas already discussed.

Neighborhood "G" is similar to "E" in that there are a large number of multiple, rental units. However, rents and values in "G" are more similar to "F" in that they are on the low end, being second lowest in both cases. Also, like "F" the population of this neighborhood is about one-half black. Further, there is a relatively low percentage of older people and a relatively high percentage of younger residents.

Therefore, certain "key" characteristics are important indicators of the nature of each neighborhood area and of its rela-

tive desirability. Using these indicators it is possible to define the seven different Rockridge sub-areas within which residential blocks exhibit similar population and housing characteristics. The average amounts of rent per room and value per room are extremely important indicators. As was explained in Chapter I and discussed in Chapter IV, the price paid for housing is directly related to the "quality" of the structure and its environment, together being the determinants of demand. Along with a particular structure, consumers buy or rent a total residential environment made up of many separate attributes including the social and economic composition of neighbors, the general appearance and level of maintenance of other dwelling units in the area, the "prestige" of the neighborhood, its relative accessibility to frequently visited places, most importantly one's place of work, the educational facilities and friends for their children, street safety and the general noise level. At any one point in time, these attributes are unique to each neighborhood area and are reflected in the prices that consumers are willing to pay. Thus, higher rents and higher values indicate a more "desirable" set of neighborhood attributes, and lower rents indicate areas that are less "desirable".

Rent per room is also an important indicator of neighborhood stability. When rents are low and when units are occupied by persons who are unable to pay much more for rent and have few other similarly priced housing choices, there is the possibility that landlords will not continue to invest in those properties and maintenance standards will be low. This situation is particularly true if vacancy rates among similarly lower priced units are low so that landlords are not forced to compete for the lower income tenants through some investment in maintenance. Visible undermaintenance of some properties on a block tends to lower the obtainable rents of adjacent properties, in turn making it more difficult for other owners to make improvements, and the deterioration process continues to spread.

Neighborhood "E" has the largest percentage of multiple and renter-occupied units. It also has the lowest percentage of single family units which are being rented. Rents and values are relatively high, being third highest in each case. Like "D" the population of the area is approximately 10 per cent black. There are slightly more older residents, the second largest percentage of all areas and somewhat less younger people, having the lowest percentage.

Unlike "E", which is adjacent to it, neighborhood "F" has the largest percentage of single family and owner-occupied units. "F" further differs from "E" and from the other Rockridge neighborhoods as well, in that rents and values in "F" are the lowest. This indicates either that units in "F" are older and less well-maintained than units in the other areas, that the amenity level of the neighborhood is below that of the other areas, or that because of a combination of both of these situations, the environment in area "F" is not as desirable as in the other neighborhoods in Rockridge. The population of "F" also differs from that of the other neighborhoods. There is a large percentage of young residents under eighteen years of age, nearly one-third, and a relatively small percentage, 13 per cent, of residents over sixty-two, indicating a large number of family households. Further,one-half of the population is black, a significantly larger percentage than is the case for the five areas already discussed.

Neighborhood "G" is similar to "E" in that there are a large number of multiple, rental units. However, rents and values in "G" are more similar to "F" in that they are on the low end, being second lowest in both cases. Also, like "F" the population of this neighborhood is about one-half black. Further, there is a relatively low percentage of older people and a relatively high percentage of younger residents.

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After examining the characteristics of all seven neighborhoods, it seems that the Grove-Shafter Freeway and Broadway serve as economic boundaries and that Claremont Avenue serves as a racial and economic boundary. House values and rents are generally lower in neighborhoods "B" and "D" then they are in"A", "C", and "E". Such amounts are somewhat lower in "F" and "G" than in any of the other neighborhoods. Further, the population in "F" and "G" includes a much larger number of black residents as well as more younger people and fewer older residents then is true in the other areas.

It is difficult to analyze the Rockridge neighborhoods without considering the areas around them. Both neighborhoods "A" and "C" seem to identify with the hill areas above them, "C" with the areas to its east and "A" with the areas to its north and east including the Claremont district in Berkeley. Neighborhood "G" and the northwestern portions of "F" seem to be similar to areas to their north, also near to Berkeley, while the southwestern parts of "G" and "D" are like those adjacent areas to their southwest. Thus, areas "E", "B", and to some extent, "D" are in the middle of these areas and feel pressures for change coming from the areas around them. One gets a sense that the pressures literally meet at the BART station or just below it. Area "C" appears to be somewhat separated from the other areas and from these pressures as it is associated more with the areas adjacent to it on the east. Racially, areas "E" and "D" are clearly transition areas between those that are largely black, and those with populations that are almost entirely white. In this sense, College Avenue and Claremont Avenue serve as boundaries.

Having analyzed census block data and describing what appeared to be separate neighborhood units, site visits were made to the areas and some interviews were conducted. Both Gruen Gruen + Associates and an appraiser from the Oakland Redevelopment Agency were involved in this effort. These visits did confirm the validity of the above neighborhood analysis.

In general, the area to the west of Telegraph Avenue contains smaller, older, frame-constructed homes and some multiple units. There is a small tract of homes between 55th, 58th, Telegraph and Shattuck which appear to be newer, built in the "thirties" and of a much higher quality and higher market value then those in adjacent areas. The area between Telegraph, Hillegass, Claremont, and 63rd consists mostly of older single family homes which are generally holding up well though some are beginning to show signs of deterioration. Residents are predominantly black in this area. Moving from this area towards College Avenue and the freeway, homes get larger and houses, yards, and streets appear to be better maintained and to have a higher amenity level. Units on the other side of the freeway and below College to 51st Street are of similar construction as those east of that area above College, though homes and yards are more modest-looking. There are some untidy looking units which show signs of undermaintenance. In general, this area appears to be a rather good middle class working area, including both black and white employed people.

In the area above College, the terrain rises approaching the hills, creating many lots where residents can enjoy views of the hills to the east and southeast, and of San Francisco and the Bay. The area above College Avenue between the Grove-Shafter Freeway and Broadway is better maintained and has a higher amenity level than that below College, though homes appear to be of relatively the same age and construction. Above College and to the north of the Freeway, average lot sizes increase noticably and houses appear much larger. Street trees and well maintained and landscaped yards give evidence of a continuing strong residential character.

To the east of Broadway this largely single family area appears to be quite well maintained. The green, open space areas of the Claremont Country Club are visible from or adjacent to many of the blocks in this area, adding to its beauty and desirability. There are several luxury apartment units under construction within view of this country club.

There is very little new residential construction outside of neighborhood "C". There is a thirty-eight unit senior citizens project under construction on Manila near College Avenue and several relatively new "turnkey" public housing projects in the areas below Claremont toward Telegraph, below Telegraph, and below Cavour Street. Though some of the newer units are quite attractive, others are very unattractive, show signs of early deterioration, and are poorly landscaped and maintained.

Presently, there appear to be virtually no vacancies in the rental units along College Avenue and in adjacent areas. However, there are "for sale" signs on many homes throughout Rockridge, especially in areas "B" and "D". Although there are new rental units under construction in "C", there are several vacancies in the older apartment buildings there.

It is very important to note that Rockridge is thought of as a desirable residential area. From various interviews and conversations from many sources it is clear that people think of and describe Rockridge as an interesting, desirable, well-located, and well-maintained community. This is especially true of the neighborhoods above College Avenue and across Broadway. Because of this favorable image, expectations in many portions of the area are still quite high. Thus, in order to maintain this image, pressures for undermaintenance and deterioration must be controlled.

Describing the Social and Economic Characteristics of the Neighborhood Residents and Changes in These Attributes Since 1960

Additional information about the residents of the study area and its neighborhoods can be obtained by examining the census population data relating to social and economic characteristics. However, such information is only available by census tract categories and unfortunately tracts for 1970 only approximate our

neighborhood boundaries. However, this data was examined and comparisons made between census tracts and with data for the city as a whole. Also, some general comparisons were made between the 1960 and 1970 census reports. However, the census boundaries were changed quite dramatically between those years and comparable 1960 data had to be estimated.

The 1970 tract boundaries roughly correspond to these neighborhoods:

1970 Census Tracts	Neighborhood Areas
4002	A + E
4003	B + D
4004	F + G
4043	C

All of these tracts include areas outside the neighborhoods. This is especially true for 4043 and 4004. Further, 4003 includes those blocks of "G" which are below the freeway. Nevertheless, the data should still provide useful information.

Total population of the entire study area declined from 1960 to 1970 due largely to the dislocation caused by the freeway construction. During this same time period, a racial change was also taking place. In census tracts 4002, 4003, and 4004 together, the white population decreased approximately 25%, the black population increased dramatically by approximately 275%, and the population of all other non-whites increased by 61%. This same trend was in evidence for the City of Oakland, except that the black population did not increase by nearly so large a percentage, 49%, while the white population decreased by 21% and the population of all other groups increased by 74%. However, in 1970, approximately 80% of the residents in Rockridge were white, a larger percentage than the 60% figure for the city as a whole. It is also interesting to note that the Rockridge population decreased by a larger percentage than

the percentage decrease in housing units over the same ten-year period. In fact, in area "C" the number of units increased while the population decreased slightly. Thus, the number of persons per dwelling unit has decreased.

In all Rockridge neighborhoods, the number of family households exceeds the number of single or other unrelated individual households, though the difference is greatest in 4002 and 4043 and least in 4004. Further, the percentage of total families with their own children under 18 years of age ranges from 34.4% in 4003 to 44.5% in 4004 with the average for the area being 38%, while the city average is 45.5%. Thus, all areas have percentages that are below the city average. Further, the average number of children per family is also less than the city average.

Related to these household relationships are the age characteristics of the population. Data show that the Rockridge percentages of total population by age groups are lower than the city figures for three categories: less than five years, five to fourteen, and forty-five to sixty-four years. The percentages are larger in Rockridge than for the city for all other age groups. Further, it is quite interesting to note that all census tracts except for 4004 have higher median ages than the city. However, the percentage decline in the median age from 1960 to 1970 was greater in all tracts in Rockridge than for the city. Thus, there has been an increase in young married couples without children and singles. If this trend continues, there will be implcations throughout the area in that the need for schools may decrease and the types of residential and commercial facilities desired will change.

If individuals and families without young children continue to represent a majority of Rockridge residents, this would suggest a possibly higher degree of mobility among residents, to the extent that elderly persons are not included in this group.

Table V - 4

Place of Residence in 1965 As a Per Cent of All Rockridge Residents in 1970 Who Are Over 5 Years of Age

Census Tract	Neighborhoods	Per Cent in Same House as in 1970	Different House In SF-Oak.SMSA	Per Cent In Different House Outside SMSA	Per Cent Abroad	Per Cent In Different House with 1965 Residence not Reported
4002	A & E	54.2	31.7	10.9	1.7	1.5
4003	B & D	50.5	27.8	12.2	3.7	5.8
4004	F & G	41.7	31.2	17.9	4.9	4.3
4043	C	65.6	21.2	8.6	1.4	3.1
	Total-Rockridge (excluding "C")	48.0	29.7	14.0	4.2	4.5
	Total-Oakland	46.9	31.0	11.4	2.4	8.2

Source: Gruen Gruen + Associates (based on Table P-2, Social Characteristics of the Population: 1970 U. S. Census)

However, data collected in 1970 relating to place of residence in 1965 show a relatively "stable" population, half of which had lived in the area for at least five years. Table V - 4 indicates that tract 4004 has had more transition and change of residency than the others. Tract 4043 is shown separately from the other Rockridge neighborhoods because that tract includes a much larger area than neighborhood "C" and because it exhibits different characteristics. Many more residents have remained in that area. Quite the reverse of the situation in the MacArthur station area, the highest percentages of residents who have remained in the area are in the more desirable neighborhoods in the area. These signs of neighborhood stability are indications of mobility out of personal choice.

It is important to now look at income data to see if there are observable differences between neighborhood areas. Such differences will affect or be affected by changes in the station area, and will relate to potential BART ridership. Median incomes by census tracts are shown in Table V - 5.

Table V - 5

Median Incomes in 1969 by Census Tract

Rockridge Station Area

Census Tract	Neighborhood	Families	Unrelated Individuals	Families and Unrelated Individuals
4002	A & E	$12,750	$5,179	$8,927
4003	B & D	10,173	2,995	5,898
4004	F & G	9,028	3,446	5,588
4043	C	16,568	2,609	11,794
Total - Oakland		9,626	3,303	6,787

Source: Gruen Gruen + Associates (based on Table P-4, Income Characterisits of the Population: 1970 U.S. Census)

Generally, median incomes are above city-wide levels. The highest income area is "C", followed closely by "A" and "E". It is interesting to note that the incomes of unrelated individuals are so much higher in "A" and "E" than in the other areas and that in fact, "C" has the lowest such amount. One explanation may be that there are fewer older, retired residents and more single individuals of working age in "A" and "E". Further, area "C" may include more younger students since the California College of Arts and Crafts is located just below the census tract boundary, while students in "A" probably include older graduate level students at U.C Berkeley or at the College of St. Albert the Great which is located in "A". It is also important to note that family incomes are lowest in "F" and "G" and are below the city median while the average number of persons per family is highest there and slightly above the city average.

A comparison of changes in income from 1960 to 1970 shows that Rockridge held its position in relation to median income citywide. In 1960, median family income for the Rockridge tracts together (excluding 4043) represented about 110% of the median income figure for the city, while the 1970 percentage is 108%. However, among the three component tracts, relative improvement in income position in 4002 and 4003 was offset by a loss of relative position in 4004 which was above the city-wide median in 1960, but which dropped below this level by 1970. This change in position is quite significant. If this trend continues, neighborhoods "F" and "G" will differ significantly from the other neighborhoods, economically, socially, and racially. As this continues to happen, these same pressures for change will naturally tend to spread to the other areas, tending to move to those which are physically located closest to "F" and "G"'s present boundaries. Having also identified pressures from other neighborhoods to stabilize the area, it is important to realize that experience does confirm that forces for change and instability will tend to dominate, unless public and private actions in the area can reinforce and solidify confidence and commitment in Rockridge.

Of further interest is Table V - 6 showing the distribution of family incomes. The per cent of families in the middle income levels is about the same in Rockridge as city-wide, while the percentage in the lowest income bracket is less and the percentage in the higher brackets is greater. A comparison between neighborhoods does show that "B" and "D" are more similar to the city average except that there are fewer at the low end, while "A", "E", and "C" have a greater per cent at the high end and still fewer at the low end. Again, it is clear that "F" and "G" have the largest percentages of lower and middle income families.

Table V - 6

Percentage Distribution of

Family Incomes - 1969

Rockridge Area

Census Tract	Neighborhood	<$5,000	$5,000-9,999	$10,000-14,999	$15,000+
4002	A & E	10.7	17.9	35.9	35.5
4003	B & D	16.7	31.9	27.7	23.7
4004	F & G	22.9	32.7	29.2	15.2
4043	C	7.0	14.3	23.4	55.3
Total-Rockridge (exclude "C")		17.6	29.5	29.7	23.2
Total Oakland		21.5	30.7	24.7	23.1

Source: Gruen Gruen + Associates (based on Table P-4, Income Characteristics of the Population: 1970, U.S. Census)

It is now useful to look at gross rent as a percentage of household income for those households (both families and individuals) which do rent, in order to see the extent to which the lower income households pay an extremely large percentage of income

for rent. From Table V - 7 it is clear that more households in the lowest income group pay high percentages of income for housing. It is somewhat surprising that the percentages of units where household income is less than $5,000 are so large. Even though many of these are single residents, it is significant that such extremely large percentages of these residents are in the 35% + category. From the analysis thus far, it is clear that housing is not extremely inexpensive in Rockridge. Thus, it is the low incomes of many residents which cause housing expenses to be so large.

It appears that low and low-middle income people are attracted to the area because of the desirability of the housing and the neighborhood, the schools, the accessibility via public transit and/or the other amenities and facilities available there. In many cases, these may be younger families expecting higher incomes soon or couples or students with few expenses other than housing. There may also be older couples or individuals who prefer this area even if they do have to pay a large amount of income for it. Thus, it does not appear that residents come to Rockridge or remain there because they are unable and cannot afford to go elsewhere. There are less expensive units throughout Oakland and we can assume that some of these must be vacant. However, if such a situation prevents owners from raising rents to cover maintenance expenditures, undermaintenance and deterioration will result, especially since structures are quite old. The fact that there are more lower income residents in "F" and "G" and that incomes there have dropped below city averages would indicate that pressures for undermaintenance are greatest there. As deterioration takes place, the quality of the neighborhood often suffers both because of the physical deterioration and because of changes in one's perception and image of its vitality, thus limiting expectations for change in the future.

Another important indication of an area's general economic situation is the sources of the income discussed above. Areas "F" and "G", which have the lowest incomes, also have the highest

Gross Rent as a Percentage of Income

For Lower Income Groups

Rockridge Station Area

Percentage Distribution of Renter-Occupied Units by the Per Cent of Household Income Spent on Rent if that Income Is:

		Less than $5,000 Per Year				$5,000 - 9,999 Per Year			
			% of Income for Rent				% of Income for Rent		
Census Tract	Neighbor-hood	% of Rental Units	< 24%	25-34%	35%+	% of Rental Units	24%	25-34%	35%+
4002	A & E	34.2	0	21.4	78.6	35.7	71.0	23.2	5.8
4003	B & D	45.9	7.5	18.7	73.8	29.5	69.2	26.3	4.5
4004	F & G	46.2	1.4	11.6	87.0	35.4	54.4	30.9	14.7
4043	C	38.5	0	18.2	81.8	17.9	42.9	14.3	42.8
Total - Rockridge (excluding C)		44.4	4.3	16.1	79.6	32.6	63.2	27.8	9.0
Total - Oakland		43.8	10.6	18.1	71.2	33.6	71.7	22.0	6.3

Source: Gruen Gruen + Associates (based on Table H-2, Structural, Equipment, and Financial Characteristics of Housing Units: 1970, U.S. Census of Population & Housing)

percentages of families receiving welfare payments, 16.7%. Areas "D" and "B" have the next highest percentage with 7.0%, "C" next with 3.9%, and "A" and "E" showing no families on welfare. All of these percentages except the first are below that for the city which is 13.9%. Also, on "fixed" incomes are those families receiving social security payments. Areas "A", "E" and "C" have the largest percentages with 29.3%, as would be expected since they have the largest number of elderly residents. Further, "F" and "G" have the least with 23.7%. Thus, about 30% of all families in "A", "B", "C", "D", and "E" receive either social security or welfare payments, and 40% of those in "F" and "G". This leaves a large number of working families in the area. Further, 29.1% of the families in "A" and "E" and 26.7% in "C" are self-employed, quite large percentages compared to 11.3% for the City of Oakland. Thus, the area does seem to have the potential to remain a middle class working community.

Of further interest are the data that show that 49.6% of all working people in "C" hold professional and managerial positions, 41.4% in "A" and "E", 34.0% in "F" and "G", and 28.3% in "B" and "D", while the Oakland figure is 23.1%. Thus, the percentages in the Rockridge area are well above those for the city and are in themselves quite high. Of some surprise is the fact that more workers in "F" and "G" than in "B" and "D" fall in this category though incomes are higher in the latter areas. Our analysis suggests that there are more professional workers in "B" and fewer in "D", which has been described earlier in this chapter as a desirable and more modest working class area. Also worth mentioning is that some of the large number of professionals in "F" and "G" appear to make lower incomes than professionals in other areas even though the specific types of jobs that they hold may differ. The extent to which racial discrimination is a factor may be part of the reason for this.

Knowledge of where Rockridge residents work and how they get to and from their jobs gives an indication of present travel patterns in the area. Table V - 8 shows that the percentage

of people working in either the San Francisco CBD or the Oakland CBD is low in tracts 4003 and 4004, but much higher in 4002 and 4043. These will be primarily the people who could most likely use BART to commute to their jobs. The largest number of workers are employed elsewhere in Oakland outside of the downtown and about one-third work in other parts of Alameda and Contra Costa counties outside of Oakland. It is interesting to note that in almost all cases, the percentage of workers in Rockridge who leave Oakland each day to commute to work is larger than the percentage for the city as a whole.

Table V - 8

Place of Work as a Percentage of All Workers

Rockridge Area

Neighborhood	SF-CBD%	SF Other %	Oakland CBD %	Oakland Other %	Alameda-C. Costa Counties Non-Oakland %	Other %
A & E	10.5	6.6	6.1	32.9	30.5	13.4
B & D	1.8	8.2	6.2	41.0	27.3	15.5
F & G	3.5	6.3	5.6	36.0	38.7	9.9
C	9.3	7.2	10.6	40.4	23.6	8.9
Total - Rockridge (including C)	5.1	7.3	7.0	38.4	30.1	12.2
Total-Oakland	4.0	6.1	7.7	43.9	23.1	15.2

Source: Gruen Gruen + Associates (based on Table P-2, Social Characteristics of the Population: 1970, U.S. Census)

A review of Table V - 9 shows that the means of transportation by which residents go to work are roughly similar for all neighborhoods, and that the majority of all workers go via private auto. It should be noted that a large percentage of residents in "A", "E", "F" and "G" do take public transit, and that in

Table V - 9

Means of Transportation to Work
As a Percentage of All Workers

Rockridge Station Area

Census Tract	Neighborhood	Private Auto (Driver)	Private Auto (Passenger)	Public Transit	Walk	Work at [illegible] and [illegible]
4002	A & E	59.0	7.9	23.4	4.4	[illegible]
4003	B & D	60.3	11.1	16.6	4.6	[illegible]
4004	F & G	52.9	12.1	18.6	6.9	[illegible]
4043	C	67.0	8.8	14.0	3.3	[illegible]
Total - Rockridge (including C)		59.5	10.4	17.5	4.9	[illegible]
Total- Oakland		62.5	9.8	16.5	6.8	[illegible]

Source: Gruen Gruen + Associates (based on Table P-2, Social Characteristics of the Population : 1970, U.S. Census)

"A" and "E" the percentage is nearly one-fourth. Accessibility from the area is quite good by bus and by auto in that AC Transit runs frequent service along College Avenue and from the area to San Francisco, and Route #24 crosses both Claremont and Broadway and on and off ramps are provided from both streets. Thus, accessibility to San Francisco, Oakland, Berkeley, and even portions of Contra Costa county from this area is quite good.

<u>Analyzing the Existing Commercial Activities in the Area</u>

The bulk of commercial activity in the area is along College Avenue. There is some activity on both Broadway and Claremont Avenues although commercial uses on these streets are intermixed with residential uses. The Grove-Shafter Freeway and the BART station physically divide College Avenue just as they divide the Rockridge residential areas.

Development along College Avenue includes both those establishments oriented to the local neighborhood market and those serving a more specialized market which goes beyond the adjacent neighborhoods. Development is largely low density and relates well to the scale of the adjoining residential neighborhoods. It includes a proliferation of the kind of stores that depend on activity and traffic but which do not need a lot of parking. Most establishments are in older buildings, many of which have apartments or offices located above them, and many shops are in attractively remodeled portions of these older buildings. Throughout the area, most commercial properties appear to be well maintained.

That portion of the street located to the north of the BART station toward Berkeley differs somewhat from the southern end toward Broadway. To the north, the level of activity is greater partially because of its proximity to two major arterials, Claremont and Alcatraz Avenues, and to similar development

in the Elmwood area in Berkeley. The intersection at College and Claremont is perhaps the busiest of all, and the development there is newer and of larger scale. There is a large Safeway Store, a branch of the Bank of America, two service stations, an ice cream store, and a new savings and loan office. These establishments, as well as those in the blocks adjacent to this intersection, serve the surrounding community which includes several Rockridge neighborhoods as well as the Claremont area in Berkeley. Other stores include several cleaners, a shoe repair, restaurants, a bicycle shop, gas stations, a picture framing shop, a fabric store, a print shop, beauty salons, a laundry, a used furniture store, a coffee and spice shop, and a large ice cream parlor/manufacturer. Three of these establishments were added to the area within the last year and a couple have been recently remodeled.

Moving south toward the BART station and then beyond it, there are many small shops oriented toward home decoration, including many antique stores, interior decorators, and several stores selling rugs, paintings, or furniture. These establishments serve a more specialized market which goes beyond the adjacent neighborhoods. Interspersed throughout the retail strip are several small offices, which generally contain local service activities, such as real estate, insurance, accounting, and medical services. At the southern end of College near Broadway there are several relatively modern apartment buildings, a bowling alley, several restaurants, print shops, beauty salons, music stores, and more antique and home decoration stores.

The commercial activities along the street are most viable at the northern end and are generally active around the station area and at the southern end near the Broadway intersection. There is a lull in activity about midway down the southern section between the station and Broadway near Manila. Further, the area just south of the BART station suffered from the dislocation caused by the construction of the freeway and is just now beginning to revive. Many stores were displaced and

the existing pattern of activity was permanently disrupted. The activity near the Broadway intersection is associated with activity on or across Broadway and partially with the California College of Arts and Crafts which is located directly across Broadway at that intersection. This pattern of the viability of development is reflected and reinforced by recent building investment which has been primarily at the northern end, and by the fact that vacancies are almost nonexistent there.

Recent development of the Rockridge Shopping Center across Broadway has also affected the College Avenue area. This center includes a Safeway, a large Payless Drug Store, a bank, and a movie theatre, as well as other establishments which together offer a wide range of self-service, convenience-type items. Further, the Center is easily accessible by auto and ample parking is availabl e. Shoppers at this center come from the Rockridge neighborhoods and the areas to the east of the center.

Therefore, there are stronger nodes of activity at either end of College, both of which exert a competitive pull away from the older shops along that street. Thus, the shops which remain on College are not all convenience stores that primarily serve the local residents, but many that are oriented toward a more specialized market.

Traffic congestion and the virtual absence of off-street parking pose problems in the area. College Avenue is frequently congested as the street is narrow and limited to one lane of traffic in either direction over most of its length. Because of this narrow width and because residential land uses are almost always adjacent to the commercial property, there is little parking space available. Thus, the successful stores on the street are those which appeal to people who are willing to get out of their cars and walk around to shop or people who live close enough to walk from their homes. Thus, the type and scale of any new commercial development in the area will be limited by the need for parking and the ability to provide for it.

Another factor affecting development is the terrible noise level associated with the freeway, both with the movement of vehicles on the freeway itself and with movement along College under the large concrete overpass which covers a large area of the street and traps and amplifies the noise of passing trucks. This noise level may discourage outdoor relaxation and recreational activities and will add to the costs of new construction and remodeling in the areas near to the freeway.

Besides College Avenue there is some small development on Broadway though most of the area above the College Avenue intersection is residential. At the College and Claremont Avenue intersection, there is a node of activity as was described. Below that, moving west there are some home decoration shops, a cleaners, beauty shops, insurance offices, several fix-it shops and a construction company. There are more small offices or workshops than actual retail stores and much of the area still remains as a residential street.

Thus, the commercial market throughout the area appears to be a healthy one. Portions of it are stronger than others. Like the residential neighborhoods which are adjacent to it, the northern section of College Avenue is a somewhat more desirable area though a market still exists all along the strip. Also, like the residential neighborhoods, there are some pressures for change. One aspect of this is that though the crime rate in Rockridge is lower than in many areas of Oakland, it has been increasing here and especially in the area between Claremont and Telegraph. Merchants in the area, especially at the southern end of College have also complained of some crime along College which they attribute largely to young kids from the area. Though the situation is not extreme, it should be controlled and guarded against very carefully so as to protect the retail image as a desirable one.

Rents in the area substantiate the relationships just discussed. North of the BART station, rents for retail and office uses

average around $.30 a square foot, depending on the structure, and go as high as $.40 and $.45. Rents have been rising and the vacancy factor is almost nil. There are many smaller tenants who have been in the area for a long time and whose rents are below these levels. There are some vacant lots in the area which have remained that way because owners are holding out for higher prices or for the "right" deal. As was mentioned, there are several new establishments in the area as well.

Rents to the south of the station are slightly lower in many cases, partially because many of the structures are not remodeled or as well-maintained. They now average around $.25 a square foot. In both areas single properties are generally owned by individuals in small parcels. It is difficult to assemble a group of these that are adjacent. Rents along Claremont and along Broadway are around $.25 a square foot, though larger office suites may rent for higher rates, closer to $.35.

There is a very delicate relationship between the rents in the area and the level and intensity of commercial development. Because demand for both office and retail uses exists, the nature of the establishments and activities which actually develop or continue to exist there will determine whether the area will serve primarily a community, a neighborhood, or even a regional market. Some potential to serve either one of these exists. If office buildings or new establishments like banks and savings and loan offices are built in the area, rents will be driven up, tending to discourage the kind of low intensity, low rent development which now exists in much of the area. Many of the present small merchants will then be driven out because they will no longer be able to pay the increased rents. Further, owners may be encouraged to hold on to older buildings, allowing them to deteriorate so that they can be redeveloped in the future into modern, higher rent structures. Thus, rents could be driven up to the point where the commercial area will begin to assume a totally different character or environment.

THE IMPACTS OF BART IN THE
ROCKRIDGE NEIGHBORHOODS

It is now important to identify the types of impacts that the BART system will have in the neighborhoods as identified. It will be the interaction between these impacts and the existing neighborhood attributes that will effect changes in the demand for space and in turn in the land use development potentials of the areas. This process will then lead to changes in the future social, economic, and physical characteristics of the area. The direct BART impacts that will be considered are those that were identified and explained in Chapter I.

A Reduction of Space Impedance

As has already been discussed, the most dramatic effect that BART will have on future land uses will be from the reduction in the time-space relationships that confront both existing and would-be travelers in the Rockridge area. The effects will be greatest if the location of the BART station is such that it can enhance existing travel patterns in the area, encourage the development of residential land uses for residents who will use the system, and encourage the development of commercial activities which will strengthen the attraction of the existing agglomerations.

The Rockridge station is located in the median of the Grove-Shafter Freeway at College Avenue. Parking is available in lots at both the east and west ends of the station and entrances exist at both locations. The station is the last one on the Concord line before entering the tunnel through the hills toward Concord to the east. Travel time is fifteen minutes to downtown San-Francisco (Montgomery Street Station), and six minutes to downtown Oakland (12th Street Station).

Recent estimates of daily patronage in 1975 when the system is fully operating are for 3,766 total trips, the majority of which are to be trips from the Rockridge station to other

destinations. It is estimated that 45.5 per cent of BART rides will arrive at the station by feeder transit, 15.5 per cent by private auto, 28 per cent will walk, and 10.7 per cent will come via kiss and ride.

The analysis earlier in this chapter showed that many of the present residents in neighborhoods "A", "E" and "C" work in either the Oakland CBD or the San Francisco CBD. Further, incomes are higher in these areas, and in the hill areas above both neighborhoods where characteristics of those neighborhoods and their residents are very similar. Thus, many people from these areas are likely to use BART for commute trips. Areas "A" and "E" are located immediately north of the station and present travel to and from places of work includes auto trips on College Avenue, Claremont Avenue, or the Grove-Shafter Freeway, all in close proximity to the BART station. Thus, use of BART will be convenient for many of these travelers, including those residing just above the area in the Claremont district of Berkeley. The percentage of these workers who now take public transit is also high. Thus, if the buses are re-routed so as to serve as a feeder system to the BART station, patronage from this group should be large. However, if the bus routes continue as presently set up, the bus system will operate in competition with the BART system rather than as a supplement to it. It is further true that many workers in "A" and "E" will find it very convenient to walk to and from the station. This will also be true for "B" and parts of "D", even though the percentage of people working in Oakland and San Francisco is not as large there.

While area "C" has a large number of potential riders, the area is not as close to the station and most of the present travel patterns do not include College Avenue, but instead follow Broadway or the surface streets leading out of these neighborhoods to the south. Thus, improved bus service from this area to the station would encourage BART usage and increase convenience. Also, many travelers from this area could arrive via kiss and ride. It will be important to try to tie the area across Broadway

closer to the station area by making the trip a convenient and pleasant one.

The percentages of workers who live in neighborhoods "F" and work in downtown San Francisco or Oakland are low and thus the numbers of people from these neighborhoods who will use BART for commuting will probably also be low. In terms of existing travel patterns, workers in "A", "E", "C", "B", and parts of "D" will benefit the most from the time and space savings offered by BART.

The Rockridge area does remain as a desirable residential community. As has been discussed, the area attracts the professional and the middle income resident and has become more attractive to the younger couple or single individual. It will be these groups who will find the availability of the BART system to be most beneficial. Thus, the demand for new units to serve these people will increase. Those neighborhoods which have been most attractive because the "quality" of the neighborhood environment is the highest there will remain the most desirable, and will become more relatively desirable than they were before the existence of BART. Thus, BART will enhance an already desirable area, tending to increase its relative quality, and increasing the demand for housing there.

As was also mentioned earlier, the pressures for change and deterioration coming from the west and northwest into the area must be controlled if they are not to have a deleterious effect on all of the other neighborhoods, both on the physical quality of structures there and on the image of the entire area as a residential community. Thus, BART will enhance the area as long as these pressures are controlled. BART alone will not serve to prevent these changes.

Therefore, BART clearly has the potential of enhancing the existing travel patterns within the area so that many of the present residents will use the system and so that additional people will be attracted into the area.

There is additional strength in the area's desirability because of its location in relation to the University area of Berkeley. Not only is there good accessibility to the campus via College Avenue, but much of Rockridge's "character" is similar to that of Berkeley. Thus, some of the travelers to and from the University will use the Rockridge station, and some students, mostly older graduate students as well as the young professionals who have recently completed school will be attracted to Rockridge because of its desirability and location with respect to the campus, Oakland, and San Francisco, and because of the accessibility available via BART. The recent actions in Berkeley to control rental rates and future new development will add to the BART impact to make the area very attractive to developers seeking to serve this market. It will be important that the area develops in a way which will keep these professionals and middle income people in the area somewhat longer than the point beyond which they are making the minimum amount of money which will permit them to move.

Reductions in space impedance will have an impact on commercial land uses as well as residential. This impact will be greatest on College Avenue between Claremont and the station, and in the areas immediately adjacent to and surrounding the station. Neighborhood residents who will use BART will increase the activity in these areas, strengthening the present agglomerations there. Pressures will increase the demand for smaller scale shops designed to serve the local market which will include the surrounding areas from which commuters will come. These stores will include convenience-type retail, some arts and crafts specialty shops, and small service-type offices. The potential clearly exists for the BART system to strengthen pre-existing economic forces. The impact will be the greatest if the commerical mixture caters to both the neighborhood residents and commuters from the area, and to the fairly sophisticated urban higher income resident as well as the middle income group. Further, if a successful link can be made between the residential areas across Broadway and the station, activity on the southern half of College Avenue will also increase.

Because of accessibility and location there will be pressures to develop the area so as to serve a sub-regional or even regional market, including office and retail concerns. These pressures will be great enough to drive up rents and land values so as to discourage some of the kinds of lower rent establishments that are now in the area. This process could eventually lead to a major change in the character of the area. The impacts from this kind of demand could be controlled somewhat if this demand wereencouraged to shift to another station area, or perhaps to Claremont Avenue or Broadway rather than College.

Therefore, the nature of change which will affect demand is directly related to the existing social, economic, and land use forces. The impacts that cause change are those that either meet little resistance from these forces or those that work with them toward the same end. In Rockridge, the situation is such that the impact of the system could cause quite significant changes in the area. By reducing space impedance, both residents using the system to go from the area and shoppers, workers, and visitors coming into the area will be affected. Because of the existing land uses, the impact will be the greatest in terms of the former group. However, the potential clearly exists to benefit the latter group as well unless there is resistance to these kinds of changes which have the potential of changing the character and scale of the existing establishments.

Advertising Impacts

A second type of impact which is very important to the commercial activities in the area relates to changes in travel patterns which will alter the visual exposure of certain commercial locations. In Rockridge, the most dramatic impact will be along College Avenue and especially near to the station. All travelers coming to the station will see this area and many will come via College Avenue and will thus pass by all of the establishments along this street. Many people will be walking to the station and will physically pass by these stores. Further, there will be some increase in traffic along Claremont Avenue as well.

Thus, people coming to ride BART as well as those coming to drop off or pick up a passenger will be able to see the stores and the merchandise that is available. Because the advertising value is directly related to the number and the disposable income of those who will walk or ride by, it will be significant in this area. Incomes of many of the residents are high and because of changes in travel patterns, these people will be exposed to the offices and shops much more often than would otherwise have been the case.

Window advertising impacts from the BART cars will not be too significant as long as the scale of development in the area is not large enough to attract significant attention. However, the general good appearance of the area will seem pleasant and may persuade some riders to stop off and look around.

Boundary Impacts

The boundary impacts relate primarily to the existence of the freeway rather than to the BART tracks which comprise only a minor portion of the concrete freeway structure. The social area analysis explained earlier in this chapter indicates that the freeway forms a social and economic division through the residential neighborhoods adjacent to it. Further, it forms a boundary between the commercial activities on either side of it along College Avenue since many of these activities relate directly to the adjacent neighborhoods. However, because of the nature of the pressures for change, the division would have been more dramatic if the freeway ran north and south through the area. Perhaps the existence of the BART station in the median of the freeway serves to decrease the boundary impact along College because the station is oriented toward both sides of the freeway and traffic will be coming from both directions.

There is another possible type of boundary impact that could result. The greatest potential from the space impedance impact is near the station and east of College rather than in areas "D",

"F", and "G". Thus, development will take place in part of the area, heightening the distinction between neighborhoods and creating a type of boundary between them.

Physical Environment Impacts

There are several environmental impacts in the Rockridge area; Noise and auto pollution directly affect those portions of the neighborhoods and commercial strips that are adjacent to the free-way. The noise level is particularly great in the area around the BART station, especially under the overcrossing at College Avenue where the noise from passing autos both on the freeway and on College is great. Development in the vicinity of these structures will definitely need to be soundproofed. Such a situation could make it undesirable for residential development to take place right near the station.

A second environmental impact will be the increase in the traffic in the neighborhood. Both the number of autos and the number and frequency of buses will increase. Streets and parking facilities in the area are clearly inadequate to handle large volumes of traffic. Thus, not only will noise and pollution increase, but traffic will be congested and will block some of the streets if volumes increase significantly. In fact, congestion will limit the impacts of the reduction in space impedance that were discussed above. Thus, one type of impact will create a situation which will limit several other types of impacts. Therefore, it is extremely important that new development in the area be designed so as to add the least possible congestion to an already overcrowded area. Careful attention will have to be given to designing the most efficient patterns of traffic flow during peak hours.

A third type of environmental impact has already been mentioned as that is the fact that if new development changes the scale and type of development in the area, the character of the Rockridge environment will also change. As has been identified, the balance between growth in the number of shops, in the types of merchandise

sold, and in the activities of existing establishments, and growth in the scale and intensity of development is a delicate one. The existence of some establishments which can pay higher rents and which are oriented to a larger, regional market could upset the balance enough that the smaller specialty and convenience shops will find it difficult to compete and to survive. Further, residential development in the area could include some larger, multiple unit structures which would change the character of portions of the existing residential neighborhoods.

Changes in the character of the physical environment can be brought about by changes in the demand for particular types of land uses as a result of the various impacts of the BART system. Thus, it is important to understand all of the types of impacts that may result from various pressures for change, and so that decisions can be made knowing the trade-offs involved.

Disruption Impacts

The act of building the BART system did disrupt the pattern of activity in the local area. In Rockridge, disruption was caused by the clearance of many residential units and of some commercial establishments to make way for the freeway and the BART lines. The disruption is permanent with respect to residential land uses since the freeway remains as a physical barrier and units were not replaced. Further, the disruption of the pattern of commercial activities along College Avenue has not been completely re-established. With the building of the freeway the commercial strip was divided near the middle and many smaller, neighborhood stores did leave the area. Activities and establishments in the section of College between the freeway and Broadway was hit the hardest by this type of impact.

CHAPTER VI

The Demand Effects of the BART System in the Fruitvale Neighborhoods - A Micro Analysis

Following the framework in Chapters IV and V, this chapter discusses the effects of the new transportation system in the third station area included in this report. As was previously discussed, the demand for space around the Fruitvale BART station is a function of the interaction of the impact of the BART system with the social, economic, and physical attributes in each of the component neighborhood areas and of the overall demand for space in Oakland. Having discussed the overall or macro demand in Chapter III, it is the purpose of this chapter to identify and describe the various component neighborhoods of the Fruitvale study area, to describe the interaction of the BART system in the context of each subarea so as to identify the types of impacts which will result and to then predict the direction and the magnitude of changes in the demand for space in each neighborhood. The first section of this chapter summarizes the demand effects in the form of estimates of obtainable rents after BART impact. The rest of the chapter then identifies the social, economic, and physical attributes of the study area and summarizes the types of impacts created by the introduction of the BART system.

A SUMMARY OF THE DEMAND EFFECTS

The demand effects of the station's construction and operation are a function of the extent to which BART impacts change the relative desirability of the area to the consumer

groups that constitute the market for residential space and for the services of those who rent or buy commercial and industrial space. After analyzing the existing socio-economic and physical conditions within the Fruitvale study area and estimating the types of impacts that BART has had and will have on that area, it is possible for Gruen Gruen + Associates to estimate the effects of these impacts on demand as they interact with existing conditions in the various neighborhoods and to express these effects as the level of obtainable rents for both residential and commercial land uses.

These rents are given in Tables VI-1 and VI-2 and represent the amount of contract rent that will be obtainable for new construction after BART impacts in each of the separate neighborhood social areas that will be described in detail throughout this chapter. In each case, rents are estimated by quality of construction and size and type of unit. Estimated sales prices for single family units in each neighborhood are also included.

In general the forces at work are such that there will be little change in the desirability of residential, commercial and industrial space in the Fruitvale neighborhood as a result of BART service. The result of the interaction of existing forces and BART impacts when considered in terms of the alternatives that confront demanders of space determines that the attractiveness of such space will not change significantly because of BART impact.

There will be few changes in both commercial and residential rents throughout the area. The only noticeable change will be in the commercial rents along East 12th Street across from the BART station where the increased activity at the station will increase demand for a limited number of convenience-type commercial establishments.

Table VI-2

Forecasts of
Obtainable Monthly Rents and Sales Prices ($)
Per Residential Unit After BART Impact

Fruitvale Station
Area

Neighborhood	Construction Type	Single-Family Dwellings		Wood Frame Const. Apartments				High Rise Const. Apartments			
	(Sq. Feet)	1500	2000	650	800	1000	1200	650	800	1000	1200
A	Good	30,000	35,000	160	190	210	230	180	200	225	250
	Average	24,000	28,000	140	160	185	200	165	180	200	215
B	Good	28,000	32,000	160	190	210	230	180	200	225	250
	Average	24,000	26,000	140	160	185	200	165	180	200	215
C	Good	27,000	30,000	160	190	210	230	180	200	225	250
	Average	24,000	25,000	140	160	185	200	165	180	200	215
D	Good	25,000	28,000	150	175	190	210	170	190	200	210
	Average	23,000	24,000	130	145	175	190	145	160	180	200
E	Good	20,000	23,000	110	130	160	165	120	135	160	170
	Average	18,000	19,000	100	120	150	160	110	120	150	160
F	Good	18,000	20,000	110	130	160	165	120	135	160	170
	Average	15,000	17,000	100	120	150	160	110	120	150	160

Source: Gruen Gruen + Associates Estimates

Table VI-2

Forecasts of
Obtainable Monthly Rents per Square
Foot of Commercial Space after BART Impact

Fruitvale Area

Major Street	Cross-Street Boundaries	Retail Rents	Office Rents
East 14th Street	27th Avenue to Fruitvale Avenue	$.25	$.25 - .35
East 14th Street	Fruitvale Avenue to High Street	$.10 - .25	.15 - .25
Fruitvale Avenue	East 14th Street to Foothill Blvd.	$.10 - .20	.10 - .20
East 12th Street	Across from BART station	$.20 - .25	.20 - .30

Source: Gruen Gruen + Associates Estimates

The effects will be greatest if these establishments can serve both the BART travelers and the local residents.

In the absence of significant effect as a result of BART impact, there do not appear to be any existing forces which could potentially serve to increase substantially the demand for space in these neighborhoods without the help of significant public action. Therefore the rents forecast as those to be in effect after BART impacts will be subject to pressures for deterioration that could shift rents downward from these levels in the future.

The question of the length of time until "after BART impact" cannot be answered with perfect exactness since it will depend on the length of time needed for the BART impacts to be fully recognized. Thus in the particular areas under consideration, when we are referring to rents and sales prices that will come into effect after BART impacts, we are essentially saying that length of time that is required for the impacts to become discernable and the market to react to that discernment. However, because we are predicting that the impacts will be minimal given the existing situation and conditions in Fruitvale, this period of time may be quite short. The confirmation of the fact that the demand for space will not increase will be provided by an absence of the type of initial private investment that takes place to test the market's reaction under expectations of change in demand. If no action is taken, there may be an increasingly greater depressing effect felt as it becomes clear that the introduction of BART has not caused any new private investment.

THE SOCIAL, ECONOMIC, AND PHYSICAL ATTRIBUTES OF THE INDIVIDUAL NEIGHBORHOOD AREAS

It is necessary to analyze the social, economic and physical attributes of the existing environment into which the possibility for change in the form of a new transit system is being introduced. It is not possible to predict the nature of the impacts or changes which will result from the system without knowledge of the present population in the area and about the factors which affect the area's desirability and livability as a residential, commercial, and industrial area, and without an understanding of past trends and present pressures for change in the nature of the area and its residents.

Defining and Describing the Component Neighborhoods

As was described in Chapter I, a neighborhood can be defined as a group of spatially-clustered dwelling units that share a very similar set of demand differentiating attributes. Because this definition may not conform to census tracts or other common forms of collecting data, it is necessary to analyze data for each residential block so as to discover those blocks which include dwellings which have similar attributes and which together make up the existing neighborhood subareas within the larger Fruitvale study area. Gruen Gruen + Associates analyzed U.S. Census block data relating to population and housing characteristics and identified six such individual neighborhoods.

The map in Figure VI-1 defines the boundaries of each neighborhood identified by the letters A through F and the data in Table VI-3 describe associated demographic and housing characteristics. These data items are descriptive indicators of the nature and quality of each neighborhood area.

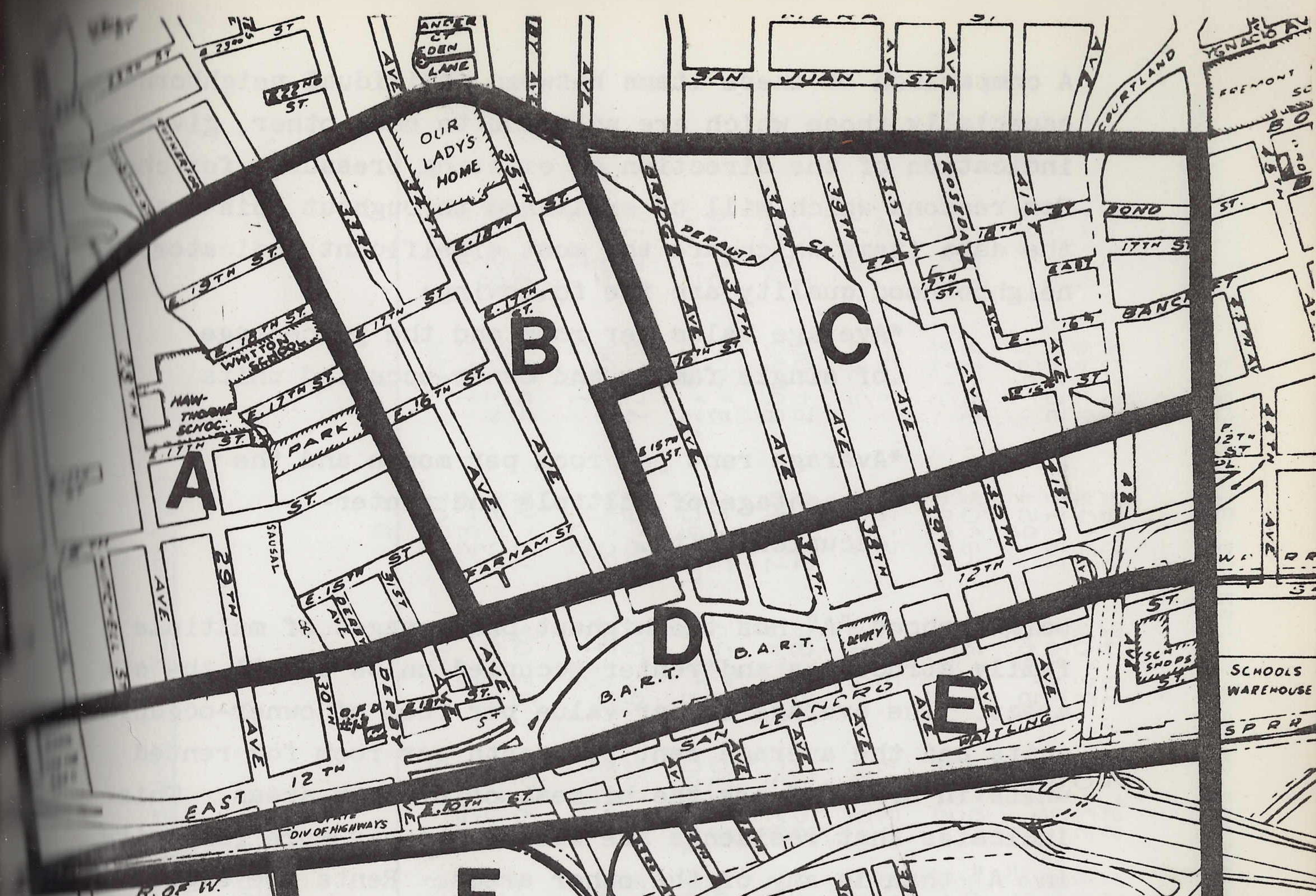


Figure VI-1

NEIGHBORHOODS BASED ON SOCIAL AREA ANALYSIS

Fruitvale Station Area

A comparison of these items between individual neighborhoods, especially those which are adjacent to each other, gives an indication of the direction of existing pressures for change. For reasons which will be explained throughout this chapter, the data items which are the most significant indicators of neighborhood quality are the following:

*Average value per room and the percentage of single family and owner-occupied units

*Average rent per room per month and the percentage of multiple and renter-occupied units.

Neighborhood "A" has the highest percentages of multiple family structures and renter-occupied units of all the six areas. The average dollar-value per room of owner-occupied units and the average rent per month per room for rented units in area "A" are the highest of all six areas. This indicates that residents are willing to pay more for units in "A" than in any of the other areas. Rents are significantly higher indicating that many of the rental units in "A" must be newer, more modern units than those in the other areas. It is interesting to note that the percentage of residents under eighteen years of age is the lowest in "A", twenty-two per cent, and about one-fifth of the population is sixty-two years or older. Therefore, this neighborhood has the largest working age population in the Fruitvale station area.

Located adjacent to "A", the housing and population characteristics of neighborhood "B" are very similar to those of "A" except that fewer units are multiples or renter-occupied and the average rent per month per room is significantly lower than in "A". This would indicate that the rental units in "B" are not as desirable or as well-maintained as those in "A" or that they are generally

Table VI - 3

Population and Housing Characteristics by Neighborhood

Fruitvale Station Area

1970

Neighborhood:	A	B	C	D	E	F
No. Units per Neighborhood	1,508	655	974	301	208	170
Average # units per block	137.0	59.5	57.2	23.2	16.0	18.9
% Single Family	22.2%	30.6%	48.9%	26.2%	43.8%	52.4%
% Multiple	77.7%	69.3%	51.0%	73.7%	56.3%	47.6%
Average # occupied units per block	126.0	56.3	54.1	20.4	14.5	17.7
% owner-occupied	15.8%	26.6%	34.2%	20.4%	28.0%	38.9%
% renter-occupied	84.1%	73.3%	65.8%	79.6%	72.0%	61.1%
Average $ value - owner-occupied	20,100	18,900	15,800	18,500	11,800	12,700
Average $ value per room	3,760	3,530	3,050	3,700	2,400	2,670
Average $ contract rent per month	109.40	92.50	95.40	73.10	86.50	78.00
Average $ contract rent per month per room	35.30	29.10	25.80	25.60	24.00	18.60
Average # rooms/unit - owner-occupied	5.35	5.34	5.17	5.01	5.02	4.79
Average # rooms/unit - renter-occupied	3.10	3.17	3.70	2.85	3.59	4.20
% black owner-occupied units	11.4%	2.4%	7.3%	14.8%	5.7%	25.8%
% black renter-occupied units	10.0%	5.5%	16.2	10.0%	19.1%	18.6%
Total population	3,162	1,402	2,549	624	634	628
% black	13.4%	6.8%	14.9%	17.1%	22.4%	25.3%
% under 18	21.9%	23.0%	32.0%	25.5%	37.4%	45.9%
% 62 and over	20.3%	22.6%	15.8%	20.5%	11.0%	13.4%

Source: Gruen Gruen + Associates based on 1970 Census Block Data

older, less modern structures. The age characteristics of the population in "B" are very similar to those in "A". The racial composition of area "B" does differ from all of the other neighborhoods in that the percentage of black residents is the lowest.

Neighborhood "C" differs from "A" and "B" in that it has the second highest percentage of single family and owner-occupied units in the area. A large number of the single family units are being rented, however, an imbalance which indicates an unstable situation. The value of the single family units and the rent per month per room of multiple units are the lowest of the three areas discussed thus far, although the values are about midway between those of all six neighborhoods. The age composition of the population is different from "A" and "B" in that one-third of the residents are under eighteen years of age and only fifteen per cent are over sixty-two. This indicates a large number of young children and probably a large number of family households.

Neighborhood "D" forms a long, narrow strip of units which are primarily in multiple family structures. Rents per month per room are lower than those in areas "A", "B" and "C", though the dollar-value per room of the single-family dwellings is slightly higher than "B" and "C". The renter-occupied dwelling units in the area are the smallest of all six areas.

Neighborhood "E" has the third largest percentage of single family and owner-occupied dwelling units. However, about sixteen per cent of all occupied units are one family units which are currently being rented, the highest such percentage in the area. The dollar-value per room of owner-occupied units is the lowest of all of the six areas. The rents per month per room arealso quite low. Thirty-eight

per cent of the population is under eighteen years of age and only eleven per cent is over the age of sixty-two. Therefore, there are a large number of youths and children in the area and relatively few older people. Like neighborhood "C", this indicates a large number of family households.

The situation in neighborhood "F" appears to be very similar to that in "E", although the percentage of young people in the area is even larger. It is interesting to note that over one-half of the units in area "F" are single family structures: the highest percentage of all six areas. Further, the percentage of owner-occupied units is also the largest of all the areas, although about fourteen per cent of all occupied units are rented single-family units. The value per room of single family units is slightly higher than area "E" but the rent per month per room of renter-occupied units is the lowest of all. Because the area suffers from such a low rent structure, and because family size appears to be so large, many residents in the area probably are there because units are available at relatively low prices. It should be noted that the percentage of black residents is the highest in areas "E" and "F" although, compared to percentages for the City of Oakland or for the two other station areas studied thus far, these percentages appear to be low.

Therefore, certain "key" characteristics are important indicators of the nature of each nieghborhood area and of its relative desirability as a residential area. Using these indicators, it is possible to define six different Fruitvale subareas within which residential blocks exhibit similar population and housing characteristics. The average amount of rent per room and value per room are extremely important indicators. As was explained in Chapter I and discussed in

Chapters IV and V, the price paid for housing is directly related to the quality of the structure and its environment, together being the determinants of demand. Along with a particular structure, consumers buy or rent a total residential environment made up of many separate attributes including the social and economic composition of neighbors, the general appearance and level of maintenance of other dwelling units in the area, the prestige of the neighborhood, its relative accessibility to frequently visited places, most importantly one's place of work, educational facilities and friends for children, the safety of the streets and the general noise level. At any one point in time, these attributes are unique to each neighborhood area and are reflected in the prices that consumers are willing to pay. Thus, higher rents and higher values indicate a more desirable set of neighborhood attributes and lower rents indicate areas that are less desirable.

Rent per room is also an important indicator of neighborhood stability. When rents are low and when units are occupied by persons who are unable to pay much more for rent, and have few other similarly-priced housing choices available to them, there is a possibility that landlords will not continue to invest in those properties and maintenance standards will be low. This situation is particularly exaggerated if vacancy rates among similarly lower-priced units are low so that landlords are not forced to compete for the lower income tenants through some investment in maintenance. Visible undermaintenance of some properties on the block tends to lower the obtainable rents of adjacent properties, in turn, making it more difficult for other owners to make improvements, and the deterioration process continues to spread. After examining the characteristics of all six neighborhoods, it is clear that the quality of the units and of the neighborhoods decreases as one moves from north to south through the neighborhoods.

Having analyzed the census block data to define and describe what appear to be separate neighborhood units, site visits were made to the area and some interviews were conducted. Both Gruen Gruen + Associates and an appraiser from the Oakland Redevelopment Agency were involved in this effort. Interestingly enough, these visits readily confirmed the validity of the neighborhood analysis.

The Fruitvale neighborhood appears to be physically divided into three sections, north of East 14th Street, south of East 14th to the BART tracks and south of the BART tracks. The area to the north between East 14th Street and Foothill is nearly all residential. The property below that, lying between East 14th Street and the BART tracks, is sort of a transition area between the two sections above and below it and is a mixture of commercial, residential and industrial uses. The area below the BART line is largely a mixture of residential and industrial uses.

In the two sections north of the BART tracks, the pattern is one of examples of deteriorating structures mixed among well maintained dwellings. It is interesting that the incidence of obvious yard maintenance seems to be considerably higher than the incidence of obvious dwelling-unit maintenance, and may be related to the age of many of the structures and the high cost of maintenance and improvements in the older ones. The degree of deterioration both in the proportion of dwellings and extent of deterioration seems to rise as one moves from the northern end of the area to the south. However, nearly every block, even in the most deteriorated sections, seems to have at least one well-maintained dwelling.

South of the BART tracks residential living conditions are affected by a variety of environmental factors with at

least the potential for adverse impacts. First, a number of rail lines in addition to the main Southern Pacific line run through the neighborhood. Second, truck traffic seems to be very heavy in parts of this area because of the location in the area of a great many industrial establishments which seem to be accessible by truck from major arterials such as High Street, Fruitvale Avenue and San Leandro. However, some of the firms do use the narrow, neighborhood streets for access. Since street facilities in many cases have not been brought up to residential standards, the situation must be viewed as inconvenient, if not dangerous. Third, the heavy traffic and the industries in this area create serious pollution problems in terms of noise, auto exhaust, and industrial emissions. Further, the large size of many of the industrial establishments dwarfs the residences, which in some cases are quite literally "in the shadows of the plants". Deterioration of residential structures throughout this area is quite high.

North of the BART tracks, dwellings seem less deteriorated, and north of East 14th Street there is less of a mixed-use problem. Uses along East 12th Street, East 14th Street and Foothill Boulevard are primarily commercial and such uses do seem largely confined to these strips. There are some scattered industrial uses between East 14th and the BART tracks but they are of a much smaller scale than those south of the BART tracks. The attractiveness of both of these areas is much superior to that to the south. Two streams, Sausal and Peralta, flow through parts of the neighborhoods. Sausal seems to be the larger and it forms the western boundary of Sanborn Park. The residential area generally appears to include low to moderate income working families plus many who are on retirement. The portion of this area west of Fruitvale Avenue contains a very high concentration of multiple dwellings, some sites containing as many as

sixty units, and the vacancy factor there is average. East of Fruitvale Avenue, the area includes several neighborhood institutions, the most prominent of which is St. Elizabeth Elementary and High Schools and Parish. These facilities are also used for adult education programs and for recreational activities for residents as well as parishioners.

Describing the Social and Economic Characteristics of the Neighborhood Residents and Changes in These Attributes Since 1960

Additional information about the residents in the study area and its neighborhoods can be obtained by examining the census population data relating to social and economic characteristics which is available by census tract categories. Fortunately, the tract boundaries, both for 1960 and 1970, do approximate our neighborhood boundaries, although two of the tracts (4061 and 4062) also include a number of blocks not included in any of our neighborhoods. Census data were examined and comparisons were made between neighborhoods and with data for the city as a whole. Some general comparisons were also made between the 1960 and 1970 census reports.

The 1970 tracts roughly correspond to these neighborhoods:

1970 Census Tracts	Neighborhood Areas
4062	A
4072	B + C
4061	D + E + F

Although it is impossible to separate data for each subarea, our earlier analysis did show that the areas which are combined are similar.

Total population of the three tracts declined slightly from 1960 to 1970. However, the population within the individual tracts in the area increased by 15.7% in tract 4062, decreased by 27.8% in tract 4061 and decreased by 2.6% in tract 4072. During this same time period, the racial composition of the area changed somewhat. The white population declined in every census tract, while the black population increased significantly in the tracts 4062 and 4072, by 276.8% and 511.7%, respectively. Thus throughout the area the black population increased by 177.5% while the white population decreased by 20.1%. Of further interest, the population of all other races increased in all areas with a total increase of 240% for the three tracts combined. Tract 4062 shows the highest percentage increase of this latter population group. However, the three tracts have a higher overall percentage of white residents, 70.4%, than is true for the city as a whole, 59.1%. The black population in the three tracts represents 22.3% of the total and the percentage of all other races is 7.3%. It is interesting to note that the Fruitvale population decreased slightly over the ten-year period while the number of housing units increased somewhat. Thus the number of persons per dwelling unit has decreased.

In all neighborhoods, the percentage of persons who speak Spanish is higher than the percentages for the City of Oakland. As is shown in Table VI-4, this is especially true in neighborhoods "B", "C", "D", "E" and "F". Thus the area has strong ethnic identification. It is very interesting to note the large percentage of persons of Spanish mother tongue living in the Fruitvale area, indicating that the Spanish language is the native language of many residents.

Table VI - 4

Spanish Population as a Percentage of Total Population

Fruitvale Area

Neighborhood	Persons of Spanish Language	Other Persons of Spanish Surname	Persons of Spanish Mother Tongue
A	15.8	3.0	14.0
B + C	28.6	6.1	25.6
D + E + F	42.0	4.3	37.4
Total - Oakland	7.6	2.2	5.8

Source: Gruen Gruen + Associates (based on Table P-2, Social Characteristics of the Population: 1970, U.S. Census)

In all neighborhoods, the number of family households exceeds the number of individual households and the difference is greatest in area 4061, where the family percentage is 64.5% as compared to 58.4% in 4062 and 54.4% in 4072. The percentage of these families with their own children under eighteen years of age ranges from 58.3% in area 4061 to 47.1% in 4072, with the average for the area being 50.6%, while the city average is 45.5%. Thus, all areas have a higher percentage of families with children than is true for the city as a whole. Further, the average number of children per family is greater in all areas of Fruitvale than is true for the city.

Relating to these household relationships are the age characteristics of the population. Data show that the Fruitvale percentages of total population by age group are greater than the city figures in three categories: less than five years, five to fourteen years, and fifteen to twenty-four years of age. The

percentages are less in Fruitvale than for the city in all age groups. Further, census tracts 4061 and 4062 have lower median ages than the city. In fact, the median age in tract 4061 is 25.1 years, while that for the city is thirty-three years. Thus, there is a large number of younger people in this area, especially. There was a decline in the average median age in all Fruitvale tracts over the last ten years.

Data relating to place of residence in 1965 as shown in Table VI - 5 indicate a high degree of mobility among residents in the Fruitvale area. The highest percentage of residents remaining in the same house for the past five years is in areas "D", "E" and "F" where that percentage is forty-four per cent.

Table VI - 5

Place of Residence in 1965 as a Percentage of All Fruitvale Residents in 1970 Who Are Over Five Years of Age

Census Tract	Neighborhood	% in Same House in 1970	% in Different House in SF-Oak SMSA	% in Different House SMSA	% Abroad in 1965	% in Same [illegible] with [illegible] Not [illegible]
4062	A	38.6	39.5	12.0	2.0	7.9
4072	B + C	36.2	35.1	7.3	8.0	13.[illegible]
4061	D + E + F	44.0	27.7	15.4	6.7	6.[illegible]
Total-Fruitvale		39.1	35.4	11.3	5.0	9.[illegible]
Total-Oakland		46.9	31.0	11.4	2.4	[illegible]

Source: Gruen Gruen + Associates (based on Table P-2, Social Characteristics of Population: 1970, U.S. Census)

Areas "A", "B", and "C" have had more transition and change of residency than the others. It seems that many of the residents in "D", "E", and "F" may have remained in the Fruitvale area because rents and home values are low there and many were unable to find other units available at these prices. Further, it

is also likely that many owners in the area have been unable to sell their homes. They most likely cannot find buyers at all or cannot sell at prices that will enable them to recover their investments. Thus, there appears to be an element with low mobility because of economic reasons. It is of futher interest to note the large percentage of people in areas "B", "C", "D" "E", and "F" who have come into those areas from abroad in the last five years. Most likely, the ethnic makeup of Fruitvale was extremely attractive to Spanish-speaking people coming into Oakland.

It is now important to look at income data to see if there are observable differences between neighborhood areas. Such differences will affect or be affected by changes in the station area and will relate to potential BART ridership. Median incomes by census tracts are shown in Table VI - 6. In all cases, median family incomes are below city-wide levels. The highest income areas are "B" and "C" followed by "A" and by "D", "E", and "F". Incomes of unrelated individuals are highest in "A" and lowest in "D", "E", and "F". Because of the large number of multiple units in "A", many of these individuals are most likely of working age. It is surprising that census tract 4072 has the highest family incomes when, in fact, the rents and house values are not as high in "B" and "C" as they are in "A". It is interesting that areas "B" and "C" have also experienced the sharpest increase in median family income from 1960 to 1970, although income still has not grown as fast as income for the city as a whole. It appears from the data that rents and house values are higher on the average in "A" because many units are newer there and not because of differences in the social and economic character of residents. The entire Fruitvale area declined in relative income position from 90% of the city-wide median in 1960 to 72% in 1970.

Table VI - 6

Median Income in 1969 For Families and Unrelated Individuals
Fruitvale Area

Census Tract	Neigh-borhood	Families	Unrelated Individuals	Families and Unrelated Individuals
4062	A	$6,815	$3,513	$5,405
4072	B + C	8,076	2,718	5,497
4061	D + E + F	6,170	2,151	4,331
Total-Oakland		9,626	3,303	6,787

Source: Gruen Gruen + Associates (based on Table P-4, Income Characteristics of Population: 1970, U.S. Census)

Of further interest is the fact that the present distribution of family income shows that the percentage of families in the lower income categories is greater than the percentage in these categories for the city, while the per cent in the two highest income categories is less than the city as shown in Table VI - 7. Further, areas "B" and "C" have significantly fewer families in the less than $5,000 a year category than is true of the other neighborhoods, and they have a much larger percentage of families in the $15,000 a year category. Areas "D", "E", and "F" clearly have the highest percentages of the lower income households. The percentage of families in the lowest income bracket is 1.7 times higher than the percentage for the city, while the general Fruitvale relationship is about 1.5 times greater.

It is now useful to look at gross rents as a percentage of household income for those households (both families and individuals) who do rent, in order to see the extent to which

Table VI - 7

Percentage Distribution of Family Incomes - 1969

Fruitvale Area

Census Tract	Neighborhood	<$5,000	$5,000-9,999	$10,000-14,999	$15,000 +
[illegible]	A	34.8	39.2	17.6	8.4
[illegible]	B + C	23.6	40.1	22.0	14.3
[illegible]	D + E + F	38.4	49.2	10.5	1.9
Total-Fruitvale		32.0	41.7	17.5	8.8
Total-Oakland		21.5	30.7	24.7	23.1

Source: Gruen Gruen + Associates (based on Table P-4 Income Characteristics of the Population: 1970, U.S. Census)

the lower income households pay an extremely large percentage of income for rent. From Table VI - 8 it is clear that the lowest income group pays the highest percentage of income for housing. However, those neighborhoods with the most households in the less than $5,000 a year category such as neighborhoods "D", "E", and "F" do not show the highest percentages of income spent on rent. This is because the rents are the lowest in these areas. Correspondingly, it should be noted that even though the rents are quite low, incomes are so low that residents must still pay a large percentage of this income for rent. It is quite significant that there appears to be a lack of households in "D", "E", or "F" earning between $5,000 and $10,000 per year who pay more than 35% of this income for housing, therefore, housing expenses in these areas must be extremely low. Because rents are highest in "A", there are more people in the 35% or more category. In general, Fruitvale residents pay a smaller percentage of their incomes for housing than is true of residents throughout Oakland. This supports our thesis that many people are attracted to and stay in the Fruitvale area because house values and rents in this area are low.

Table VI - 8

Gross Rent as a Percentage of Income For

Lower Income Groups

Fruitvale Area

Percentage Distribution of Renter-Occupied Units by the Per Cent of Household Income Spent on Rent if that Income is:

Census Tract	Neighbor-hood	Less than $5,000 Per Year % of Rental Units	% of Income for Rent <24%	25-34%	35% +	$5,000 - $9,999 Per Year % of Rental Units	% of Income for Rent < 24%	25-34%	35% +
4062	A	48.5	9.9	18.3	71.8	37.3	77.5	19.2	3.2
4072	B + C	51.7	9.5	10.9	79.6	34.6	81.8	16.0	2.2
4061	D + E + F	53.3	17.4	21.6	61.0	39.3	81.1	18.9	-0-
Total-Fruitvale		50.4	11.4	16.7	72.0	36.8	79.6	18.1	2.3
Total-Oakland		43.8	10.6	18.1	71.2	33.6	71.7	22.0	6.3

Source: Gruen Gruen + Associates (based on Table H-2, Structural, Equipment, and Financial Characteristics of Housing Units: 1970, U. S. Census of Population & Housing)

Despite the environmental defects, the housing available in neighborhoods "D", "E", and "F" appears to be acceptable to a group of housing demanders. It may be that this area offers the cheapest housing in Oakland in a non-black neighborhood. The low housing price, the fact that the neighborhood has not become black, and the fact that it has remained largely a Spanish-speaking area appeal to many of those now living there. However, such a low rent situation usually arises because of undermaintenance. In these neighborhoods this process has been the result of the lack of interest on the part of both the public and private sectors in a residential area designated for industrial use and generally possessing such a low residential environmental level. This situation, in turn, encourages further undermaintenance to the point where new improvements have not been made in the area.

Another important indication of the area's general economic situation comes from the sources of the income discussed above. Areas "D", "E" and "F" which had the lowest incomes also have the highest percentage of families receiving welfare, 26.3%. Area "A" has the next highest percentage with 23.5% and areas "B" and "C" are lowest with 17.3%. All these percentages are higher than that for the city which is 13.9%. Also on fixed incomes are those families receiving social security payments. Areas "D", "E", and "F" have the largest percentage, 28%. This would not be expected since these areas have shown the smallest percentages of elderly residents in the population. Therefore, because the number of persons per family is largest in these areas, the number of families with elderly members who would qualify for social security is also highest. Thus, over fifty per cent of the families in areas "D", "E" and "F" are receiving either social security or welfare payments. These percentages do not indicate that welfare and social security are the only sources of income. In fact, the highest percentage of all areas, 81.6% of families in "D", "E", and "F" also earn wages and salaries. However, to remain eligible for public assistance and social security, income received from other sources must be low. Further, the median incomes discussed earlier are low supporting the fact that

regardless of employment income a large number of families are at least partially dependent on social security or welfare checks. It will be very difficult for these families to increase their payments for rent or to increase their maintenance expenditures. Thus, given the present situation it is difficult to imagine that there will be a significant upgrading of housing conditions in these three neighborhoods.

Table VI - 9

Place of Work as a Percentage of All Workers

Fruitvale Area

Census Tract	Neighborhood	SF CBD	SF Other	Oakland CBD	Oakland Other	Alameda-Contra Costa Counties (Non-Oakland)	Other
4062	A	3.0	9.5	5.4	44.2	26.6	11.3
4072	B + C	1.3	3.3	5.7	53.3	19.2	17.[illegible]
4061	D + E + F	0.7	2.9	0.6	42.5	27.6	25.6
Total - Fruitvale		2.0	6.1	4.6	47.1	24.2	15.[illegible]
Total - Oakland		4.0	6.1	7.7	43.9	23.1	15.[illegible]

Source: Gruen Gruen + Associates (based on Table P-2, Social Characteristics of the Population: 1970, U.S. Census)

Knowledge of where Fruitvale residents work and how they get to and from their jobs gives an indication of present travel patterns in the area. Table VI-9 shows that the percentage of people working in either the San Francisco CBD or the Oakland CBD is quite low in all census tracts and especially in areas "D", "E", and "F". All tracts show percentages which are significantly below city-wide figures. Thus, there will be few people living near to the Fruitvale BART station who could possibly use BART to commute to their jobs. The largest number of workers are employed elsewhere in Oakland outside of the downtown and about one-fourth work in other parts of Alameda and Contra Costa county outside

of Oakland. Without knowing the exact destinations of this latter group it is difficult to know whether any of them will be able to benefit from the time and space savings offered from the BART system.

A review of Table VI - 10 shows that the means of transportation by which residents go to work is roughly similar for all neighborhoods except that a much larger percentage of residents in "D", "E", and "F" walk. Some of these residents may work in the local factories. If so this might explain why some of them continue to live in these areas. It should also be noted that a larger percentage of residents use public transit in all neighborhoods than is true for the city and fewer people drive their own automobiles to work.

Table VI - 10

Means of Transportation to Work as a Percentage of All Workers

Fruitvale Area

Neighborhood	Private Auto (Driver)	Private Auto (Passenger)	Public Transit	Walk	Work at Home & Other
A	59.9	9.2	22.9	5.8	2.2
B + C	57.9	12.2	19.1	9.7	1.1
D + E + F	55.8	7.2	17.0	18.1	1.9
Total-Fruitvale	58.4	9.9	20.5	9.4	1.8
Total-Oakland	62.5	9.8	16.5	6.8	4.4

Source: Gruen Gruen + Associates (based on Table P-2, Social Characteristics of the Population: 1970, U.S. Census)

Describing the Role of the Church in the Fruitvale Area

In general, because so many of the residents in the Fruitvale area are Catholic and do belong to St. Elizabeth's Parish (including St. Mary's Help of Christians) and because so many parishioners are Chicano and Portugese and do see the church as an important part of their lives, the Church plays a key role within the functioning of the neighborhoods. Therefore, it is critical that the Church be actively involved in programs or strategies designed to maintain the stability of the area as a residential neighborhood. Or conversely, it is difficult to imagine that the neighborhood will be maintained and upgraded without the participation and support of the Church. There is a definite commitment on the part of the Church to both socio-economic concerns. The fact that Jesuit priests are now in Fruitvale attests to their interest in and commitment to the area.

Very important to the future of the area is its ability to encourage homeowners to stay in the area and to attract the kinds of people who will take an active interest in the neighborhood, and who will be economically able to help maintain the area. Further, many of those who do move from Fruitvale as incomes increase or as other options present themselves do continue to attend church at St. Elizabeth's and to be active in the parish. Such continued interest in the parish and in the area is important to the future of the community.

Analyzing the Existing Commercial Activities in the Area

The bulk of commercial activity in the area runs along East 14th Street. Historically, commercial development along this street represented a well-established community oriented shopping district. However due to changes in trade patterns in the character of adjoining neighborhoods and in the types of other

shopping facilities available activity along the street is no longer as great as it once was. Other streets with some commercial activities include East 12th Street, San Leandro Street, and Fruitvale Avenue.

Intensity of development along East 14th differs east and west from the Fruitvale Avenue intersection. The large Montgomery Ward store at the western end of the street is the strongest attraction there as it sets the scale of surrounding development and activity, and provides ample parking facilities. Also, at this end of the street is an agglomeration of medical service facilities including the 90-bed Oakland Hospital, a large medical office building, and doctors' offices and several pharmacies. Further, there is a barber shop, a travel agency, a restaurant, furniture stores, and an auto service center. Structures are newer at this end and development is generally on larger sites.

In the other direction along East 14th from Fruitvale Avenue, retail establishments are older and include a variety of smaller shops and offices oriented to local services. Parking facilities are available but are not as readily accessible being located behind the stores in the area. Establishments include many loan offices, several taverns, restaurants, insurance agents, an advertising agency, appliance repair services, several clothing stores, banks, beauty salons, drug stores, a liquor store, a variety store, music stores, second hand stores, and various home care and food supply outlets. Interspersed throughout this section are several vacant structures where shoe stores, department stores, and a theatre have gone out of buiness. Most structures are old and are not well-maintained. At 39th Avenue the character of the strip changes to primarily auto-servicing establishments, including both auto sales and repair.

However, except for the agglomerations at either end of the street, East 14th is no longer the major shopping district that it once was, and there are several reasons for this.

People have moved out of the area and have been replaced by residents who are generally in the lower income brackets, where purchasing power is not as great. At the same time, crime in the area has increased and people are afraid to come to shop, especially in the hours after dark. Thus, the market potential of the area has been decreasing. Further, large outlying shopping centers now serve many of the customers who had shopped in the Fruitvale area. East Oakland is in a particularly bad position competitively in that there are major shopping centers in Hayward, San Leandro and Oakland. While many of the customers for the department stores that remain along East 14th had previously been residents from the Fruitvale neighborhoods, this is no longer the case. Old customers now come from other areas of Oakland, from Alameda, and a few from Berkeley and few new customers are coming at all. As a result of all of the above reasons there has been no new construction in the area to bring in new residents or new merchants. Further, as merchants leave the area, there are fewer stores left to draw customers and new establishments and thus the situation perpetuates itself. Many smaller, family run establishments will remain in the area until the present owners are no longer able to keep up the business.

absent landlords

Much of the property is owned by absentee landlords who for the most part have generally not been interested in the appearance and maintenance of the area. Those owners who are concerned have had a difficult time securing the consent and support of other owners for various improvement projects in the area. Most likely, owners are trying to squeeze out as much as they can from the area, knowing that, in general, the old market in the area is dead. Thus, like much of the residential areas adjacent to it, the once strong commercial strip along East 14th is no longer an active, thriving area.

Leading away from East 14th, Fruitvale Avenue provides commercial and service activities oriented to the adjacent neighborhood areas. A number of medical services occur along this street

relating to the concentration of medical uses on East 14th. Other establishments include several taverns, auto repair services, a print shop, beauty salons, and cleaners, Interspersed along Fruitvale are residences which are generally well-maintained. The appearance of the area is pleasant and of low density.

Thus, commercial activity which will be needed to service the area in the future will likely be neighborhood oriented and of fairly small scale. The strongest portion of the area will remain around the Montgomery Ward store and the medical offices at the western end of East 14th. Rents in the area reflect this situation. Along most of East 14th, retail rents range from $.10 to $.25 per square foot per month depending on the location and the condition of the structure and rents in the immediate vicinity of the Montgomery Ward store are slightly higher. Along Fruitvale Avenue, they average from $.10 to $.20 for retail space. Thus, the demand for space as evidenced by current rents is now low in these commercial areas which are designed essentially to serve only the local market. As is true for residential land uses, the existing demand is a reflection of the "quality" of an area or a particular location. As that demand changes it becomes the market force which determines the improvement, stability, or deterioration of that quality in the future, assuming no significant public actions to alter "natural" trends.

<u>Analyzing the Industrial Activities in the Area</u>

Currently, the area below East 14th Street is zoned for industrial uses. However, much of the land has not been used by industry. Residential uses as well as some vacant land continue to exist in the area, raising questions as to the appropriateness of maintaining industrial zoning throughout the entire area.

The major types of industries in the area include glass container and can manufacturing, food canning and processing, cold storage and warehousing, ready-mix concrete and building materials, woodworking and cabinetry, and chemicals. In general, the plants benefit from their close location to rail lines and/or truck routes. On the other hand, disadvantages of the location include the congested truck movements on the narrow local streets, the inadequacy of parking facilities both on and off-street, and the general deterioration of the residential uses in the area which detracts from the appearance and "quality" of the area, and which may be the cause of much vandalism and theft.

As was described in Chapter III, and as was learned from numerous interviews with the industries in the area, there will not be a great demand for space there for new industries, but some of those already located there will seek some space to remodel, rebuild, and even expand existing facilities. Because such large portions of most of the existing facilities include hard-to-move and expensive-to-rebuild equipment, most of the firms now in the area will not move to an entirely new location. Therefore the overall demand for space will not be sufficiently strong to result in the replacement of all existing dwellings by industries.

Thus, the desirability of the entire area in the future will depend on the compatibility that will exist between the industrial and residential uses which will likely remain there and which are now in conflict. Future actions to eliminate this conflict would be most advantageous to both kinds of uses. If the residential areas are neglected and continue to deteriorate, and social problems increase in the area because of the kinds of residents who will be attracted to the deteriorated, inexpensive housing that will continue to exist, vandalism and theft will most likely increase and not only will the costs to industry increase, but workers at these plants will not want to come into the area. Thus, a concerted effort should be made on the part of the city and

the industries in the area to work to strengthen those particular residential sections which have fewest adverse environmental effects from the industry and which have remained strong residential areas. In the process, however, some homes may have to be destroyed. Those which exist in the marginal zones and which are in the shadow of a huge plant or which face onto a heavily-traveled street may be in clearly undesirable areas. Yet many others are in clusters of residential units which are not so immediately affected by industry.

Improvement of the residential areas will improve the industrial areas as well and may even serve to increase industrial demand somewhat. However, unless the problems of the residential neighborhoods are faced, the industrial area will also suffer. Further, if the area improves, workers in the plants may find it quite desirable to live in the area and be close to the job.

Improvement is used here to mean much more than merely zoning changes in parts of the area. It means an interest and commitment on the part of the City to work with the community and the church organization to improve public services and facilities in the area and to encourage development and maintenance of the existing structures. In fact, there is a danger that a zoning change alone may have an opposite effect serving to hasten the deterioration process. The zoning change will make it easier for the present owners to sell their units and leave the area. Many may well do this figuring that it is their only chance to get out before property values in the area drop even lower than they are presently. If there are no public efforts to improve the area and restore some confidence in it, this exodus may occur. Thus, new residents will be those who primarily want cheap housing and who will be unable to improve conditions there. Without such efforts deterioration will continue.

THE IMPACTS OF BART IN THE FRUITVALE NEIGHBORHOODS

Having identified the neighborhoods in the area and having described the existing trends for the demand for space for residential, commercial, and industrial land uses, it is now important to identify the types of impacts that the BART system will have in the areas identified and analyzed. It will be the interaction of the following BART impacts and the existing neighborhood attributes that will cause changes in the future social, economic, and physical characteristics of the area. The direct BART impacts that will be considered are those that were explained in Chapter I and discussed within the context of the other study areas in Chapters IV and V.

A Reduction in Space Impedance

The most dramatic effect that BART will have on future land uses in the area will be by reducing the time/space relationships that confront both existing and would-be travelers in the Fruitvale area. The effects will be greatest if the location of the BART station is such that it can enhance existing travel patterns in the area, encouraging the development of residential land uses for residents who will find the system convenient for commuting to and from work and encouraging the development of nonresidential facilities by linking the BART system to the existing agglomerations of such actities and thus, strengthening the total attraction.

The BART station is located on East Twelfth Street between Fruitvale Avenue and Thirty-Seventh Street. The station's orientation and parking lot is to the north, facing out on East Twelfth and toward the backs of the establishments along East Fourteenth Street. By 1975, the Fruitvale station is expected to have one of the heaviest patronages of all of the stations in the East Bay, totalling 16,674 trips on an average day. Peak hour patronage including both morning and evening peak hours is expected to account for about one-half of these trips. The great majority

of all trips, or approximately 85 per cent, are expected to be trip productions. Thus, Fruitvale is conceived of as primarily a collector station, with its use as a destination playing a relatively minor role. The station is expected to collect passengers from widespread residential areas who will approach the area along freeways and several of the major arterial streets radiating out of the station toward the East Oakland hill area and across the channel to Alameda. Peak hour travel time to downtown Oakland (Twelfth Street Station) is six minutes and to the Montgomery Street station is fifteen minutes.

The analysis earlier in this chapter showed that very few of the present residents in all of the Fruitvale neighborhoods work in downtown Oakland or San Francisco. Further, incomes of many of these residents are quite low indicating that money available for travel on BART is limited, and present travel patterns to and from work will not be enhanced by the new system. Rents and house values are also relatively low and for all of the reasons discussed earlier, by and large, the kinds of people who will continue to be attracted to much of this area will not be those who are attracted to the area because of BART or who will use BART to any significant degree. There may be some desire on the part of these residents to use BART for shopping trips into Oakland once the City Center project is completed, but their numbers will not be extremely large.

Thus, patronage at this station will come primarily from people in the Oakland hill areas to the north east and in Alameda. The largest number of these trips will be work-oriented although the number of shopping trips to both Oakland and San Francisco will be significant. That is, of course, if accessibility to the station is convenient and if the image and desirability of the adjoining neighborhoods enhance or, at the least, do not detract from the immediate BART station area. Thus, the space impedance impact of the BART system on the immediate Fruitvale neighborhoods will be somewhat inconsequential, while the potential impact of the neighborhood on the station and its

use could be significant. The quality of the environment that commuters will enter into will be important and will have an impact on the kinds of people who will be riders and on their numbers. It will be important to maintain the area so as to make it more attractive and more safe.

Predictions of likely access modes to the station include 58.8 per cent who will arrive by feeder transit, 18.3 per cent by kiss and ride, 11.9 per cent by parked auto, and 11.1 per cent who will walk. Thus, use of the station will depend quite heavily on the existence of a convenient and efficient bus system to and from the area. Assuming such is provided, it is quite likely that the majority of BART patrons will use it. However, our analysis leads us to believe that fewer than 11.1 per cent will walk and more than 11.9 per cent will park their cars at the station. Thus, the vast majority of travelers will definitely come into the station area from outside of the immediate station neighborhoods.

There is a considerable amount of institutional and office space near to the BART station site. Saint Elizabeth's Roman Catholic Church is prominent both visually and in terms of diversity of services. The hospital and doctors' offices near East Fourteenth and Fruitvale Avenue offer a significant amount of medical services. In addition, there is a large amount of office space within walking distance of the station, including doctors, dentists, sales, loan, and real estate offices. However, much of the service available at the Church and the range of service offered in the office space along East Fourteenth serves the local area and will not generate patronage on BART. There is some potential for riders who will come into the area to go to the western end of East Fourteenth to Montgomery Ward's and the hospital and medical facilities at that location. This is probably the only agglomeration which will attract many people into the area from any substantial distance. However, it will be important to link this focus of activity to the station with some type of feeder service if there is to be any potential impact as the distance is just beyond that convenient for walking. This may not require additional bus service since riders can transfer to AC Transit buses running along East 14th Street.

There will be some people employed in the industrial area who will use BART to commute to work. In most cases, facilities are not within walking distance and again a feeder system is needed. However, in general, these industries are not labor intensive and thus they will not benefit directly from BART as a means of transporting employees. Further, it is unlikely that BART impact will be great enough to create the potential within the existing environment for labor intensive light industries to locate near to the Fruitvale station. Though some employees will use BART, their numbers will not be large. Further, because BART is not a freight-carrying service, there will be no real time and space savings offered to industry.

Thus, the space impedance impacts will relate mainly to riders coming into the area from the hills to the north east and from Alameda to leave via BART and, to a limited extent, to those coming into the area on BART and going to upper East Fourteenth Street or to the industrial areas.

As a result of the increased traffic, both via bus and private auto in the immediate station area, the level of activity in the area will increase to the point of generating a potential market for convenience-type shopping on the land immediately across the street from the station. The best plan would be to develop facilities that would serve this market as well as the neighborhood residents. The most likely design of such a plan would encourage the development of shops that would open to both sides of the block, onto East Twelfth Street and East Fourteenth Street. The general type of shops would include a liquor store, delicatessen, flower stand, newspaper and tobacco shop, cleaners, a gas station, and other convenience and service outlets. By serving both the local and travelers' market, the demand for such a development on a fairly small-scale probably will exist. However, it is crucial that such a development be very well-maintained, be designed well, and be patrolled often so that crime is kept to a minimum. The present situation in that area is such that a little neglect will jeopardize the success of the entire area.

Therefore, the nature of change which will affect demand is directly related to the pre-existing social, economic and land use forces. The impacts that affect change are those that either meet little resistance from these pre-existing forces or those which work with them toward the same end. In Fruitvale, the situation is such that the impedance impact of the system on the demand for space will be minimal unless the existing conditions in the entire area are improved. As was described, this will be most easily done in the blocks immediately across from the station. Further, if the existing trends are allowed to continue, the area will begin to have a negative impact on the station, thereby discouraging ridership and travel in the area.

Advertising Impacts

A second type of impact relates to changes in the travel patterns which will alter the visual exposure of certain commercial locations. In Fruitvale, the most dramatic impact will be at the blocks immediately across from the station parking lot. All travelers who will come to the station will see these sites and many will drive past them. An attractive frontage in the direction of the station could encourage patrons to stop and shop at this location.

The actual advertising value of this location is directly related to the number and the disposable income of those who will walk or ride by it. Our analysis shows that the real advantages of the location relate to the people who will come into the station area from the hills and Alameda. The disposable incomes of these people will be higher than those of the present residents. The numbers of such commuters will be directly related to efforts to maintain and improve the existing neighborhoods and to the level of feeder transit service available to and from the station.

Advertising impacts from the windows of the BART trains could be important to the Montgomery Ward store. Its size alone clearly points out its location and may encourage travelers to stop and shop. At most other locations along the route an adverse

impact may result from the unattractiveness of structures and properties along the BART route which would discourage visitors and travelers from stopping in the area.

Boundary Impacts

There are clear boundary impacts from the BART tracks. Although the condition of development above the tracks is clearly superior to that below, the existence of the BART line makes this division within the area much clearer. Further, the orientation of the station toward East Twelfth Street accentuates this separation.

The impact of such a further physical division through the area may make it possible for those neighborhoods to the north of the tracks to become somewhat disassociated from the image of the areas below. This would help to raise expectations in areas "A", "B", "C", and "D". However, further separation of the residential and industrial areas below the tracks may lead to further neglect of these areas leading to further deterioration and increasing social and economic problems. However, the strength of the northern areas is not so great as to resist adverse pressures as the southern sections continue to deteriorate. The situation would result in negative impacts throughout the area and at the station site by influencing the image and safety of all locations.

Further, this southern section lies between the BART line and Alameda. Continued neglect and deterioration in this area would tend to separate the station from Alameda and may tend to discourage travel through the area.

Physical Environment Impacts

Impacts on the physical environment caused by BART will be more significant in the neighborhoods to the north of the BART tracks than in those to the south. Increased traffic along 35th Avenue, Fruitvale Avenue, and other streets leading from those areas of Oakland to the south east of the station will generate noise,

congestion, and automobile pollution in those neighborhoods. Neighborhood streets appear to be inadequate in some cases to handle large increases in the volumes of traffic during peak travel times. Further, increased traffic will increase the danger for pedestrians, bicyclists, and children playing in the area. This is especially ture on the streets near to St. Elizabeth's Parish and school.

As has been explained there are significant adverse environmental impacts already existing in the neighborhoods below the BART station as a result of the mix of residential and industrial land uses there. Thus, some increase in the traffic in the area will not cause significant impact. In fact, because of the orientation of the BART station to the northern side of the tracks, because parking is available at that end, and because of the congestion which already exists along those streets that are used by trucks coming to and from the industries, the number of the BART patrons who will drive through neighborhoods "E" and "F" will not be large.

Disruption Impacts

The act of building the BART tracks and the station did not significantly disrupt patterns of activity in the Fruitvale area. Because of the locations of BART, few structures were displaced and there were no significant existing patterns of activities that were dislocated by the BART tracks.

CHAPTER VII

Forecasts of the Effect of the BART System on Land Use Potential in Each of the Three Station Areas Assuming No Changes in Present Public Policy

This chapter forecasts the changes in land use potential around the MacArthur, Rockridge, and Fruitvale stations that will follow the introduction of BART service. It summarizes our use of the land use change predicting framework developed in Chapter II to forecast the change in land use potential that will result from the interaction of the change-causing demand forces identified in Chapters IV, V and VI, and the change-resisting costs identified in Chapter II.

After identifying the site costs in each neighborhood subarea of each study area, all of the variables required by the feasibility model will have been identified. Given all of these demand and supply parameters, the model can then be used to identify the threshold densities at which new development will be feasible in each neighborhood subarea. A comparison between these required threshold densities and those densities that are allowed under current zoning in each neighborhood will determine the likely changes in land use which will result under the assumption that existing zoning is not changed. Estimates of the likely magnitude of the space required by these forecasts will then be expressed as the number of new housing units or the square feet of new commercial space.

It should be stressed that the use of the model to determine the potential of new development also has implications for the potential of redevelopment and for the future maintenance of existing structures in each subarea. Because the procedures used to go through the model to determine threshold densities for new construction are the same steps that can be used to determine the costs of redevelopment in those cases where new

construction is not feasible by private market forces, a section explaining the question of the potential for redevelopment will also be included in this chapter. However, because the future maintenance of existing structures is directly related to the potential for new development and future land use change, the discussion of future maintenance will be included in Chapter VIII as a part of the discussion of the estimated primary and secondary effects of future land use changes assuming present public policy.

IDENTIFYING THE SITE COSTS

As explained in Chapter II, the cost of land for new construction includes the value of the land plus the capitalized value of the existing structure on it plus the costs of demolition and site preparation, or the value of the land plus site preparation costs if the land stands vacant. Thus, in order to identify the present site costs, as we will call them, in each neighborhood, extensive field work was required to identify the sales prices of properties and vacant land that have been sold within the areas in the past couple of years and of properties that are now up for sale there. A large sample of such properties was gathered for Gruen Gruen + Associates by an appraiser with the Oakland Redevelopment Agency. He identified the date of sale, the sales price, the lot area, and the floor area and the age of the existing structure. Gruen Gruen + Associates then added an amount for site preparation and demolition where appropriate to each sales price, grouped these total amounts by neighborhood subareas, and determined an average site cost per square foot of lot area in each case. This average cost can then be used in the model described above. It represents the likely site cost to a developer who will purchase the property, demolish the existing structure if necessary and use the site for new construction.

To use the model to test feasibility it is appropriate to use the average site cost. If development is feasible at that price, it can be said that development is feasible in that

neighborhood, which answers one of the questions posed in this study. However, there will most likely be some parcels which are significantly higher priced. One would have to go through the model again to recheck for potential at that higher cost. However, within a neighborhood where development is possible it is most likely that the less expensive land will be developed before that which is much more expensive unless the development project is of very large scale in which case the developer may look for ample-sized lots, to some extent regardless of whether or not some of the parcels have sound structures on them.

In each subarea it is also appropriate to determine the lowest site costs for residential properties and to use these amounts to again go through the model. If development was not feasible at the average cost, some potential may exist on the less expensive properties, including the land that stands vacant, although there are very few such parcels in our three study areas. Even if some types of development were feasible, the potential will be greater on these less expensive sites. After having gone through the process at both the average and the lowest site costs, it is possible to identify those neighborhoods where there is no existing potential for development.

Only estimates of average land costs have been made for commercial properties because the portions of the streets which are included in each estimate are small areas where the income potential of each location is fairly similar and where the quality of existing structures is also similar. This is not true in those cases where there has been some fairly new construction but in these cases we assume that the newer buildings will generally not be purchased, demolished, and rebuilt upon until the older or vacant sites are taken.

IDENTIFYING THE POTENTIAL FOR NEW DEVELOPMENT IN EACH STATION AREA

MacArthur Station Area

Current residential site costs for each of the neighborhoods in the MacArthur station area are shown in Table VII - 1, and current commercial land costs for each of the major streets are shown in Table VII - 2.

Table VII - 1

Residential Site Costs Per Square Foot of Lot Area

Neighborhood	Average Site Cost	Lowest Site Cost
A	$5.75	$4.75
B	5.75	4.25
C	5.75	4.25
D	5.75	4.25
E	5.00	3.90
F	5.25	4.00

Source: Gruen Gruen + Associates and the Oakland Redevelopment Agency

These site costs and land costs and the rents estimated in Chapter IV are the specific inputs required to use the model developed in Chapter II to test for the future feasibility of each type of new development after BART impact.

Table VII - 2

Commercial Land Costs Per Square Foot of

Lot Area

MacArthur Area

Major Street	Cross-Street Boundaries	Average Land Cost
Telegraph Avenue	W. MacArthur & 41st St.	$4.00
Telegraph Avenue	45th St. & 33rd Street (excluding above)	4.75
W. MacArthur Blvd.	G/S Freeway & Broadway	4.75
W. MacArthru Blvd.	G/S Freeway & Market St.	4.00
Broadway	42nd St. & 33rd St.	10.00
Grove Street	45th St. & 33rd St.	4.00
Pill Hill Area	Telegraph, Broadway, MacArthur Fwy., and 28th St.	8.50

Source: Gruen Gruen + Associates and Oakland Redevelopment Agency

Table VII-3 summarizes the results of this process by identifying the lowest densities or threshold zones required if the development of a particular type and size of housing unit is to be feasible in each neighborhood area after BART impact. A comparison of the threshold zones with the present zone for each neighborhood indicates whether the required density for each type of new residential construction is allowable under the existing zone.

For example if the table shows that a density of at least that allowable under a R-60 zone is required if new development is to be feasible and the present zone is R-50, new construction will most likely not take place. However if the present zoning is changed to accommodate the required higher density of at least R-60, new development will take place. Therefore the

Table VII - 3

Threshold Zones Required for New Residential Development After BART Impacts

MacArthur Station Area

(sq. ft.)	Single Family Dwellings 1500	Single Family Dwellings 2000	Wood Frame Apartments 650	Wood Frame Apartments 800	Wood Frame Apartments 1000	Wood Frame Apartments 1200	High Rise Apartments 650	High Rise Apartments 800	High Rise Apartments 1000	High Rise Apartments 1200
Neighborhood A - Present Zone = R-50										
Average Land Cost:										
Good Construction	--	--	R-60	R-70	R-80	--	--	--	--	--
Average Construction	--	--	R-60	R-70	R-70	R-80	--	--	--	--
Lowest Land Cost:										
Good Construction	--	--	R-60	R-70	R-80	--	--	--	--	--
Average Construction	--	--	R-60	R-60	R-70	R-70	--	--	--	--
Neighborhoods B & C - Present Zone = R-70										
Average Land Cost:										
Good Construction	--	--	R-60	R-70	R-90	--	--	--	--	--
Average Construction	--	--	R-60	R-70	R-70	R-80	--	--	--	--
Lowest Land Cost: (includes land along Telegraph Avenue zoned C-40 (R-70))										
Good Construction	--	--	R-60	R-70	R-80	--	--	--	--	--
Average Construction	--	--	R-60	R-60	R-70	R-70	--	--	--	--

Table VII - 3 (cont'd)

Threshold Zones Required for New Residential Development After BART

Impacts

MacArthur Station Area

	Single Family Dwellings		Wood Frame Apartments				High Rise Apartments			
(sq. ft.)	1500	2000	650	800	1000	1200	650	800	1000	1200
Neighborhood D - Present Zones= R-70 & S-1										
Average Land Cost:										
Good Construction	--	--	R-60	R-60	R-60	R-60	--	--	--	--
Average Construction	--	--	R-60	R-60	R-60	R-60	R-90	--	--	--
Lowest Land Value										
Good Construction	--	--	R-60	R-50	R-50	R-50	--	--	--	--
Average Construction	--	--	R-50	R-50	R-50	R-50	R-90	--	--	--
Neighborhood E - Present Zone = R-70										
Average Land Cost:										
Good Construction	--	--	--	--	--	--	--	--	--	--
Average Construction	--	--	--	--	--	--	--	--	--	--
Lowest Land Value										
Good Construction	--	--	--	--	--	--	--	--	--	--
Average Construction	--	--	--	--	--	--	--	--	--	--

Table VII - 3 (cont'd)

Threshold Zones Required for New Residential Development After BART Impacts

MacArthur Station Area

	Single Family Dwellings		Wood Frame Apartments				High Rise Apartments			
(sq. ft.)	1500	2000	650	800	1000	1200	650	800	1000	1200
Neighborhood F - Present Zones = R-70 & R-50										
Average Land Cost:										
Good Construction	--	--	==	--	--	--	--	--	--	--
Average Construction	--	--	R-90	--	--	--	--	--	--	--
Lowest Land Cost: (Includes land along Grove Street zoned C-40 (R-70))										
Good Construction	--	--	R-90	--	--	--	--	--	--	--
Average Construction	--	--	R-80	R-90	R-90	--	--	--	--	---

Table VII - 3 (cont'd)

Threshold Zones Required for New Residential Development After BART

Impacts

MacArthur Station Area

	Single Family Dwellings		Wood Frame Apartments				High Rise Apartments			
(sq. ft.)	1500	2000	650	800	1000	1200	650	800	1000	1200
Broadway Area - Present Zone = C-40 (R-70)										
Average Land Cost:										
Good Construction	--	--	R-60	R-60	R-50	R-50				
6 Floor Height							R-80	R-70	R-60	R-70
12 Floor Height							R-90	R-70	R-70	R-70
Average Construction	--	--	R-60	R-60	R-50	R-60				
6 Floor Height							R-80	R-70	R-60	R-70
12 Floor Height							R-90	R-70	R-70	R-70
Immediate Pill Hill Area - Present Zone = S-1 (R-80)										
Average Land Cost:										
Good Construction	--	--	R-60	R-60	R-50	R-50				
6 Floor Height							R-80	R-70	R-60	R-60
12 Floor Height							R-90	R-70	R-60	R-70
Average Construction	--	--	R-60	R-60	R-50	R-50				
6 Floor Height							R-80	R-60	R-60	R-70
12 Floor Height							R-90	R-60	R-60	R-70

Source: Gruen Gruen + Associates Estimates

primary purpose of the table is to allow for a comparison between the existing zone and that determined from the model as being required for new development so as to determine the potential for land use change if the zoning is not changed. However, the table is also useful to determine the change that will be necessary in the zoning if such new development is to take place.

At this point, it is useful to explain the steps taken to reach the conclusions in Table VII - 3. As an example, Table II - 1 - B is used to test the feasibility of constructing a good quality, 800 square foot, wood frame apartment, and it indicates that such a unit currently costs $14,552. to build. Table IV - 1 indicates that this type of unit will be rented for $180 per month in MacArthur neighborhood "A". Thus with that amount of rent as revenue and with the given cost of construction, the analysis quantified in Table II - 1 - B indicates that the development of such a unit would be feasible if land costs are $3,448 or less. Table VII - 1, indicates that land in this neighborhood costs $5.75 per square foot on the average. Locating that amount in Table II - 4, it is possible to determine that the zoning in the neighborhood would have to be R-70, R-80, or R-90 if the land cost per unit is to be $3,448 or less. Thus, the conclusions as to feasibility in Table VII - 3 indicate that the neighborhood must be zoned at a density of at least R-70 if the project is to be built. Table VII - 3 also indicates that the present zone in the neighborhood is R-50. Therefore, construction of this particular type of unit is unlikely to occur in this subarea unless the zoning is changed. The proper interpretation of this conclusion would be that given all of the existing demand and supply assumptions, there is potential for the new construction of such a size and type of housing unit. However, because the existing zone does not allow the density required for such construction, the development of such a unit is presently not feasible in this neighborhood. Looking down the table to the construction of this same type,

size and quality of unit under lowest land cost indicates that a density of that at R-70 is still required for new construction on the less expensive sites and vacant land. For such construction to be feasible, the present zone of R-50 would have to be changed to R-70, R-80, or R-90. This same process was used to arrive at all of the conclusions given in Table VII - 3. Any changes in assumptions would necessitate going back through the process just described to test the feasibility of the development under new conditions.

A dash (--) in Table VII - 3 indicates that given the forecasts of obtainable rents and the amounts of land costs, new construction will not be feasible even at the greatest density, R-90. Thus, in these cases zoning changes will not be sufficient to assure the feasibility of new construction. Rather, the social area designation will have to be improved so as to increase rents from estimated levels.

It is possible to also test the feasibility of constructing residential units along the major commercial streets. To do this, we again use the same procedure to go through the series of tables included in the model using the residential rents from Table IV - 1 but now using the commercial land costs from Table VII-2. The residential rents that apply along the commercial streets are those forecast for the neighborhood through which the commercial street passes unless otherwise stated as in the case of Broadway and Pill Hill. A comparison of land costs from Tables VII - 1 and VII - 2 indicates that average commercial land costs are approximately equal to the lowest costs of residential land in the neighborhoods through which each street passes except for Broadway and Pill Hill. Therefore densities given in the table apply to the commercial street as well as the rest of the neighborhood because both rents and land costs are similar. In those cases where the allowable residential density along commercial streets differs from that in the rest of the neighborhood the commercial zone is noted. Both Broadway and Pill Hill are shown separately because rents and land costs differ from the adjacent neighborhoods.

A comparison of the densities required for new residential development after BART impact with the densities allowable under the current zoning pattern indicates the following forecasts of changes in land use assuming no change in the present public policy including the zoning pattern:

1. The construction of single family detached dwelling units will not be feasible in MacArthur.

2. The construction of medium-high and high density wood frame apartments both of good and average construction will take place in neighborhoods "B", "C", and "D", and in the Broadway area near MacArthur and in the immediate Pill Hill area.

3. High rise construction will be built only in the Broadway and Pill Hill areas.

4. Residential construction will most likely not take place in neighborhoods "A", "E", and "F". New wood frame apartment development is clearly not feasible in "E" and will not be possible in "F" and "A" without a change to a higher density zoning.

The model can also be used to test the feasibility of new commercial development along the major commercial streets in the MacArthur area. Using Tables II - 5 and II - 6 from the model, Table IV - 2 for the rents, and Table VII - 2 for the site costs, the same process described above can be used to draw the conclusions as to the required density of new retail and office development shown in Table VII - 4.

The numbers in the table represent the threshold floor-area ratios which will make the development of new retail stores

Table VII - 4

Forecasts of Threshold Floor-Area Ratios Required for New Commercial Development after BART Impacts

MacArthur Station Area

		General Retail Sales				Administrative and Professional Offices and Banks			
		Steel Frame		Wood Frame		Steel Frame		Wood Frame	
Major Streets	Cross Street Boundaries	AG	UG	AG	UG	AG	UG	AG	UG
Telegraph Avenue	W. MacArthur & 41st St.	--	4	1	2	--	--	1	2
Telegraph Avenue	45th & 33rd Streets (excluding above)	--	--	--	4	--	--	--	--
West MacArthur Blvd.	G/S Freeway & Broadway	--	4	2	2	1	1	1	1
West MacArthur Blvd.	G/S Freeway & Market	--	--	--	--	--	--	--	--
Broadway	45th & 33rd Streets	--	3	3	2	1	1	1	1
Grove Street	45th & 33rd Streets	--	--	--	--	--	--	--	--
Pill Hill	Immediate Area	--	3	2	2	1	1	1	1

AG - Above Ground UG - Underground Parking

Source: Gruen Gruen + Associates

and offices feasible. For example the numbers 1 and 2 for wood frame construction for general retail sales and offices uses on Telegraph between W. MacArthur and 41st indicate that both office and retail construction will be feasible at a floor-area ratio of one when a parking lot is provided above ground, while the floor-area ratio will have to be doubled to two to cover the costs of constructing a basement garage. The existing C-40 zoning indicates that building to a floor-area ratio of 1 or 2 is allowable and therefore such construction will be likely in the future. Comparisons between the floor-area ratios allowed by the zoning and those indicated as required in Table VII - 4 lead to the following forecasts of change in the commercial land use potential:

1. Both small scale retail and office development will be feasibly built on Telegraph Avenue in those blocks immediately across from the BART station while no such new construction is likely along Telegraph at either end of the station blocks.

2. Both larger scale, steel frame office buildings and smaller scale individual offices will be feasible along West MacArthur Boulevard between the Grove-Shafter Freeway and Broadway, along Broadway, and on Pill Hill. Thus, we can expect such development in these areas probably being added incrementally and not in large scale developments.

3. Smaller scale retail construction will be feasible in the same three areas mentioned in 2. but to a slightly higher density. This reflects the fact that retail rents are generally slightly lower than office rents though land costs for each are the same. Large steel frame retail structures will not be built because they will require a floor-area

ratio of the type for downtown department stores and not the kind of development that will be most likely to locate at MacArthur. Tt is possible that perhaps larger office development could feasibly include one floor of retail at ground level.

4. It is unlikely that there will be new commercial development along West MacArthur Boulevard between the Grove Shafter Freeway and Market Street or along Grove Street. In both cases, forecast obtainable rents are not high enough to support new construction.

The kinds of commercial development referred to as general retail and administrative and professional offices and banks includes most retail establishments except perhaps gas stations and food sales and service establishments, and most office uses including the smaller, service oriented offices and the larger office buildings. It can be assumed that in those areas where new retail and/or office uses are feasible, gas stations will also be feasible as they can generally pay rents that are competitive with other low rise commercial uses.

It should be mentioned that our discussion of future commercial construction does not include the construction of a shopping center development which can take advantage of centralized management and can, to some extent, create its own market environment by providing for cooperation between merchants and for the type of agglomeration needed to attract the most customers.

Rockridge Station Area

Residential site costs for each of the neighborhoods in the Rockridge study area are shown in Table VII - 5, and average commercial land costs along the major commercial streets are shown in Table VII - 6.

Table VII - 5

Residential Site Costs Per Square Foot of of Lot Area

Neighborhood	Average Site Cost	Lowest Site Cost
A	$7.75	$5.75
B	7.50	4.50
C	6.50	4.00
D	5.80	3.90
E	7.25	6.00
F	6.25	4.40
G	5.50	4.50

Source: Gruen Gruen + Associates and Oakland Redevelopment Agency

Table VII - 6

Commercial Land Costs Per Square Foot of Lot Area

Rockridge Area

Major Street	Cross Street Boundaries	Average Land Cost
College Avenue	63rd & G/S Freeway	$10.00
College Avenue	G/S Freeway & Broadway	9.00
Broadway	Vicinity of College Ave. Intersection	9.00
Claremont Avenue	Vicinity of College Ave. Intersection	7.25

Source: Gruen Gruen + Associates and Oakland Redevelopment Agency

These land costs and the rents estimated in Chapter IV are the specific inputs necessary to determine the future feasibility after BART impact in each neighborhood subarea and along each commercial street.

As was explained above for MacArthur, a threshold zone can be identified which indicates the minimum density required for the development of various types of residential units in each neighborhood area. Table VII - 7 identifies these zones in each particular case. It should again be stressed that these conclusions are based on the specific demand and supply assumptions that have been explained and discussed in earlier chapters and which relate to the existing cost structures and the future set of expectations in the area after BART impact. The conclusions shown in Table VII - 7 were derived by the process explained earlier in the section of this chapter that discusses the MacArthur area and using the series of tables included in the feasibility model in Chapter II, Table V - 1, Table VII - 5, and Table VII - 6.

The potential for residential development was tested in each neighborhood and along the major commercial streets. Land costs and residential rents along Claremont Avenue are the same as those in subarea "E" and, therefore, the conclusions for "E" apply in both cases. The same is true for neighborhood "G" in that conclusions for "G" apply along Telegraph Avenue as well.

Forecast rents along Broadway are like those forecast for "C" although land costs are generally somewhat higher. Thus, potentially feasible new development along Broadway is listed separately in the chart. The same is true for College Avenue. Forecast obtainable rents in that portion of it, between the Grove-Shafter Freeway and Sixty-Third are the same as those for neighborhood "A", and those for the section between the freeway and Broadway are similar to those for subarea "B". However, in both cases, land is more costly along College than in the residential areas adjacent to it. Thus, the feasibility of new development along College is also listed separately in Table VII - 7.

Table VII - 7

Threshold Zones Required for New Residential Development

After BART Impact

Rockridge Station Area

	Single Family Dwellings		Wood Frame Apartments				High Rise Apartments			
(sq. ft.)	1500	2000	650	800	1000	1200	650	800	1000	1200
Neighborhood A - Present Zones = R-50 & R-30										
Average Land Cost:										
Good Construction	--	--	R-60	R-50	R-50	R-50				
6 Floor Height							R-70	R-70	R-60	R-60
12 Floor Height							R-70	R-70	R-60	R-60
Average Construction	--	--	R-60	R-50	R-50	R-50				
6 Floor Height							R-70	R-70	R-60	R-60
12 Floor Height							R-70	R-70	R-60	R-60
Lowest Land Cost:										
Good Construction	--	--	R-50	R-50	R-40	R-40				
6 Floor Height							R-60	R-60	R-60	R-60
12 Floor Height							R-70	R-60	R-60	R-60
Average Construction	--	--	R-50	R-50	R-40	R-40				
6 Floor Height							R-60	R-60	R-60	R-60
12 Floor Height							R-70	R-60	R-60	R-60

Table VII - 7 (cont'd)

Threshold Zones Required for New Residential Development

After BART Impacts

Rockridge Station Area

(sq. ft.)	Single Family Dwellings 1500	2000	Wood Frame Apartments 650	800	1000	1200	High Rise Apartments 650	800	1000	1200
Neighborhood B - Present Zone = R-50										
Average Land Cost:										
Good Construction	--	--	R-60	R-60	R-50	R-50				
6 Floor Height							R-80	R-80	R-70	R-80
12 Floor Height							R-90	R-90	R-80	R-90
Average Construction	--	--	R-60	R-60	R-50	R-50				
6 Floor Height							R-80	R-70	R-70	R-70
12 Floor Height							R-80	R-80	R-70	R-80
Lowest Land Cost:										
Good Construction	--	--	R-50	R-50	R-40	R-40				
6 Floor Height							R-70	R-70	R-60	R-70
12 Floor Height							R-80	R-70	R-70	R-80
Average Construction	--	--	R-50	R-50	R-40	R-40				
6 Floor Height							R-70	R-60	R-60	R-60
12 Floor Height							R-70	R-70	R-60	R-70

Table VII - 7 (cont'd)

Threshold Zones Required for New Residential Development

After BART Impacts

Rockridge Station Area

(sq. ft.)	Single Family Dwellings 1500	2000	Wood Frame Apartments 650	800	1000	1200	High Rise Apartments 650	800	1000	1200
Neighborhood C - Present Zones = R-30 & R-70										
Average Land Cost:										
Good Construction	--	--	R-50	R-50	R-40	R-40				
6 Floor Height							R-70	R-60	R-60	R-60
12 Floor Height							R-70	R-70	R-60	R-60
Average Construction	--	--	R-50	R-50	R-50	R-50				
6 Floor Height							R-70	R-60	R-60	R-60
12 Floor Height							R-70	R-70	R-60	R-60
Lowest Land Cost:										
Good Construction	--	--	R-40	R-40	R-40	R-40				
6 Floor Height							R-60	R-50	R-50	R-50
12 Floor Height							R-60	R-60	R-50	R-50
Average Construction	--	--	R-50	R-40	R-40	R-40				
6 Floor Height							R-60	R-60	R-50	R-50
12 Floor Height							R-60	R-60	R-50	R-60

Table VII - 7 (cont'd)

Threshold Zones Required for New Residential Development
After BART Impacts

Rockridge Station Area

(sq. ft.)	Single Family Dwellings 1500	2000	Wood Frame Apartments 650	800	1000	1200	High Rise Apartments 650	800	1000	1200
Neighborhood D - Present Zone = R-50										
Average Land Cost:										
Good Construction	--	--	R-60	R-60	R-60	R-50				
6 Floor Height							R-90	--	--	--
12 Floor Height							--	--	--	--
Average Construction	--	--	R-60	R-60	R-50	R-50				
6 Floor Height							R-80	--	--	--
12 Floor Height							R-90	--	--	--
Lowest Land Cost:										
Good Construction	--	--	R-50	R-50	R-50	R-50				
6 Floor Height							R-80	--	R-90	--
12 Floor Height							--	--	--	--
Average Construction	--	--	R-50	R-50	R-50	R-50				
6 Floor Height							R-70	--	--	--
12 Floor Height							R-80	--	--	--

Table VII - 7 (cont'd)

Threshold Zones Required for New Residential Development
After BART Impacts

Rockridge Station Area

Neighborhood E - Present Zone = R-50& R-70
Claremont Avenue Area - Present Zones = C-30 (R-70)

(sq. ft.)	Single Family Dwellings 1500	Single Family Dwellings 2000	Wood Frame Apartments 650	Wood Frame Apartments 800	Wood Frame Apartments 1000	Wood Frame Apartments 1200	High Rise Apartments 650	High Rise Apartments 800	High Rise Apartments 1000	High Rise Apartments 1200
Average Land Cost:										
Good Construction	--	--	R-60	R-60	R-60	R-60				
6 Floor Height							R-80	R-90	R-90	--
12 Floor Height							R-90	--	--	--
Average Construction	--	--	R-60	R-60	R-60	R-50				
6 Floor Height							R-80	R-70	R-90	R-80
12 Floor Height							R-80	R-80	--	R-90
Lowest Land Cost:										
Good Construction	--	--	R-60	R-60	R-60	R-50				
6 Floor Height							R-80	R-80	R-90	--
12 Floor Height							R-90	R-90	--	--
Average Construction	--	--	R-60	R-60	R-60	R-50				
6 Floor Height							R-70	R-70	R-80	R-80
12 Floor Height							R-80	R-70	R-90	R-90

Threshold Zones Required for New Residential Development

After BART Impacts

Rockridge Station Area

(sq. ft.)	Single Family Dwellings 1500	2000	Wood Frame Apartments 650	800	1000	1200	High Rise Apartments 650	800	1000	1200
Neighborhood F - Present Zone = R-50										
Average Land Cost:										
Good Construction	--	--	R-60	R-60	R-60	R-60				
6 Floor Height							R-90	--	--	--
12 Floor Height							--	--	--	--
Average Construction	--	--	R-60	R-60	R-60	R-50				
6 Floor Height							R-80	--	--	--
12 Floor Height							R-90	--	--	--
Lowest Land Cost:										
Good Construction	--	--	R-60	R-60	R-50	R-50				
6 Floor Height							R-90	--	--	--
12 Floor Height							--	--	--	--
Average Construction	--	--	R-50	R-50	R-50	R-50				
6 Floor Height							R-70	--	--	--
12 Floor Height							R-80	--	--	--

Table VII - 7 (cont'd)

Threshold Zones Required for New Residential Development

After BART Impacts

Rockridge Station Area

Neighborhood G - Present Zones = R-50

Telegraph Avenue Area - Present Zone = C-30 & C-40 (R-70)

(sq. ft.)	Single Family Dwellings 1500	2000	Wood Frame Apartments 650	800	1000	1200	High Rise Apartments 650	800	1000	1200
Average Land Cost:										
Good Construction	--	--	R-60	R-60	R-60	R-60	--	--	--	--
6 Floor Height							--	--	--	--
12 Floor Height							--	--	--	--
Average Construction	--	--	R-60	R-60	R-60	R-60	--	--	--	--
6 Floor Height							--	--	--	--
12 Floor Height							--	--	--	--
Lowest Land Cost:										
Good Construction	--	--	R-60	R-60	R-50	R-50	--	--	--	--
6 Floor Height							--	--	--	--
12 Floor Height							--	--	--	--
Average Construction	--	--	R-60	R-60	R-50	R-50	--	--	--	--
6 Floor Height							--	--	--	--
12 Floor Height							--	--	--	--

Threshold Zones Required for New Residential Development

After BART Impacts

Rockridge Station Area

(sq. ft.)	Single Family Dwellings 1500	Single Family Dwellings 2000	Wood Frame Apartments 650	800	1000	1200	High Rise Apartments 650	800	1000	1200
College Avenue Area - Present Zones = C-30 & C-35 (R-70)										
North of BART Station										
Average Land Cost:										
Good Construction	--	--	R-60	R-60	R-50	R-50				
6 Floor Height							R-70	R-70	R-60	R-70
12 Floor Height							R-80	R-70	R-70	R-70
Average Construction	--	--	R-60	R-60	R-50	R-60				
6 Floor Height							R-70	R-70	R-60	R-70
12 Floor Height							R-80	R-70	R-70	R-70
South of BART Station										
Average Land Cost:										
Good Construction	--	--	R-60	R-60	R-50	R-50				
6 Floor Height							R-90	R-80	R-70	R-80
12 Floor Height							R-90	R-90	R-80	R-90
Average Construction	--	--	R-60	R-60	R-50	R-50				
6 Floor Height							R-80	R-70	R-70	R-70
12 Floor Height							R-90	R-80	R-80	R-80

Table VII - 7 (cont'd)

Threshold Zones Required for New Residential Development

After BART Impacts

Rockridge Station Area

(sq. ft.)	Single Family Dwellings 1500	2000	Wood Frame Apartments 650	800	1000	1200	High Rise Apartments 650	800	1000	1200
			Broadway Area - Present Zones = C-30 (R-70)							
Average Land Cost:										
Good Construction	--	--	R-60	R-60	R-50	R-50				
6 Floor Height							R-70	R-70	R-60	R-60
12 Floor Height							R-70	R-70	R-70	R-70
Average Construction	--	--	R-60	R-60	R-50	R-50				
6 Floor Height							R-70	R-70	R-60	R-70
12 Floor Height							R-80	R-70	R-60	R-70

A comparison of the densities required for new residential development after BART impact with the densities allowable under the current zoning pattern indicates the following forecasts of future residential land use patterns assuming no change in the present public policy or zoning pattern:

1. The construction of low density garden apartments will take place in some portions of neighborhoods "A", "B", and "C".

2. The construction of some medium density apartments will take place in portions of neighborhoods"A", "B", "C", "D", "F", and along College Avenue and Broadway.

3. Medium high and high density apartment construction will be built along Broadway Terrace in neighborhood "C", and in portions of neighborhoods "E", "G", and along College Avenue. It should be noted that apartment development at these densities is feasible throughout the Rockridge area but that actual future construction at such densities will be limited to only those areas where higher densities are permitted by the zoning.

4. High-rise apartment construction will be limited to the areas along Broadway Terrace in neighborhood "C", on College Avenue north of the BART station, on Broadway, and in limited areas along Claremont Avenue and College Avenue south of the station. High-rise construction is feasible in"A", "B", and "C" although actual construction is limited by zoning.

5. New single family detached homes will generally not be built in Rockridge except by private owners who may re-build on their own properties, or in those cases where there is a vacant lot within one of the neighborhood areas.

6. In general, the existing zones will limit new development to an overall lower density than would result without any density controls. Therefore pressures for zoning changes to allow higher density development at some locations will exist especially in neighborhoods "A", "B", "E", and portions of "D" near to the BART station.

It should be noted that in general land values throughout the Rockridge area do not appear to have been significantly inflated because of expectations of increased demand for space as a result of BART's introduction, and only in neighborhood "E" do land values appear to have risen noticeably from such pressures.

Table VII-8 identifies the threshold floor-area ratios at which future new commercial development will be feasible along College Avenue and in the vicinity of the intersections of College with Claremont Avenue and with Broadway. As was explained earlier, the retail and commercial uses tested include most types of retail establishments except gas stations and food sales and service establishments and most office uses including the smaller, service oriented offices as well as the larger office building developments.

Differences between the threshold ratios expressed for retail and office uses in the table result from differences in the forecasts of obtainable rents, in the requirements as to the ratios of the amount of parking that must be provided per square foot of floor space which affects the percentage of total development cost attributable to parking, and in the per square foot construction costs for building the structure. In general office development in Rockridge will have the ability to pay higher rents than retail establishments and will not be required to provide as much parking as retail, even though construction costs are slightly higher for office uses. Therefore, new office construction is often feasible at lower

Table VII - 8

Forecasts of Threshold Floor-Area Ratios
Required for New Commercial Development
after BART Impacts

Rockridge Station Area

Major Streets	Cross Street Boundaries	General Retail Sales Steel Frame AG	General Retail Sales Steel Frame UG	General Retail Sales Wood Frame AG	General Retail Sales Wood Frame UG	Administrative and Professional Offices and Banks Steel Frame AG	Administrative and Professional Offices and Banks Steel Frame UG	Administrative and Professional Offices and Banks Wood Frame AG	Administrative and Professional Offices and Banks Wood Frame UG
College Avenue	63rd & G/S Fwy.	4	2	2	1	1	1	1	1
College Avenue	G/S Fwy. & Broadway	--	3	2	2	--	3	2	2
Claremont Avenue	Vicinity of College Avenue Intersection	--	2	2	2	2	2	1	1
Broadway	Vicinity of College Avenue Intersection	--	--	--	2	--	3	2	2

AG - Above Ground Parking UG - Underground Parking

Source: Gruen Gruen + Associates

densities than is retail. However, there are existing structures in the area which can be remodeled at somewhat less cost than demolishing and rebuilding on a site. Further remodeling, unlike new construction, does not require that parking be provided, thus decreasing costs substantially. Therefore, the feasibility of providing for new commercial facilities along College is greater than that indicated in Table VII-8. This is especially true for retail uses in that many of the existing structures now serve as retail establishments and can easily be remodeled and reused.

Comparisons between the floor-area ratios given in Table VII-8 and those allowable under existing zoning lead to forecasts of future commercial land use changes which can be summarized as follows:

1. College Avenue north of the station between BART and the Berekely border will show the most potential for new office and retail development. Both new uses are feasible and some new construction of each is likely. Further, it is likely that several of the existing structures will be remodeled and used primarily for new retail establishments. New office uses will most likely include banks and savings and loan offices and retail uses will most likely include more specialty shops as well as convenience-type retailing like variety stores.

2. New commercial development on Claremont Avenue in the vicinity of College Avenue will be similar to development along College. However, because of easier access by auto and because of greater distance from the foot traffic in the immediate BART station area, pressures

for office development may shift here. Further retail uses which need much space for storage or repair service may also locate here because land is somewhat cheaper and because of the two reasons above.

3. College Avenue south of the station between BART and Broadway will have some new office and retail development though pressures to locate here will not be as great at this end of College. In general those establishments which desire space at a slightly lower price will choose this half of the street. These will most likely include the types of office uses which do not depend on as great a contact with clients or customers as do many retail stores and banks. These locations may be more desirable for smaller, service oriented office uses like medical and dental offices, collections agencies or even office supply outlets.

4. New commercial development at Broadway is similar to that along the College portion which adjoins it except that retail uses will not be as feasible as they will be along College while office uses are still likely.

5. Some new development will combine several types of uses in one complex with residential and retail, and office and retail being most desirable.

6. As new commercial development takes place rents in the area will increase to the point where some of the existing more marginal establishments will be priced out of the market.

Fruitvale Station Area

Current residential site costs for each of the neighborhoods identified in the Fruitvale study area are shown in Table VII - 9 and the current commercial land costs along the major commercial streets are shown in VII - 10.

Table VII - 9

Residential Site Costs Per Square Foot of Lot Area

Fruitvale Area

Neighborhood	Average Site Cost	Lowest Site Cost
A	$5.50	$4.50
B	5.50	4.25
C	5.00	2.75
D	4.00	3.00
E	4.00	2.50
F	3.00	2.50

Source: Gruen Gruen + Associates and the Oakland Redevelopment Agency

Table VII - 10

Commercial Land Costs Per Square Foot of Land Area

Fruitvale Area

Major Street	Cross Street Boundaries	Average Land Cost
East 14th Street	27th Avenue & Fruitvale	$10.00
East 14th Street	Fruitvale & High Street	8.00
Fruitvale Avenue	E. 14th St. & Foothill Blvd.	6.50
East 12th Street	Across From BART Station	7.50

Source: Gruen Gruen + Associates and the Oakland Redevelopment Agency

Using these land costs and the forecasts of obtainable rents as given in Chapter VI, it is possible to test the feasibility of different types of development at different locations throughout this station area.

Table VII - 11 identifies the zones necessary to make different types of residential development feasible. The zoning categories given in this table indicate the minimum density required if the development of each type of unit is to take place, given the existing cost structure and the forecasts of obtainable rents, after BART impact. The relationship between costs are given in the series of tables in Chapter II, rents are those from Table VI - 1 and land costs are those in Tables VII - 9 and VII - 10. Table VII - 11 identifies the potential for residential development in each neighborhood area and along the major commercial streets. Rents along Fruitvale Avenue and on East Fourteenth Street west of Fruitvale Avenue are assumed to be those given for neighborhoods "A" and "B". Rents along East Fourteenth Street east of Fruitvale Avenue are the same as those for subarea "D".

Comparisons of the densities required for new residential development after BART impact with those allowable under the current zoning pattern indicates the following forecasts of future residential land use patterns assuming no change in the present public policies or zoning pattern:

1. There will be some new construction of medium-high to high density apartment structures in neighborhoods "A", "B", "C", and along Fruitvale Avenue. Construction of such units is feasible in neighborhood "D" and along East 14th Street, but is limited by zoning restrictions. "D" is zoned for industrial uses and the commercial zone along East 14th Street limits density.

2. High-rise apartment construction will not be feasible in the Fruitvale neighborhoods.

Table VII - 11

Threshold Zones Required for New Residential Development After BART Impacts

Fruitvale Station Area

(sq. ft.)	Single Family Dwellings 1500	Single Family Dwellings 2000	Wood Frame Apartments 650	Wood Frame Apartments 800	Wood Frame Apartments 1000	Wood Frame Apartments 1200	High Rise Apartments 650	High Rise Apartments 800	High Rise Apartments 1000	High Rise Apartments 1200
Neighborhood A - Present Zone = R-70										
Average Land Cost:										
Good Construction	--	--	R-70	R-60	R-70	R-90	--	--	--	--
Average Construction	--	--	R-70	R-70	R-70	R-80	--	--	--	--
Lowest Land Cost:										
Good Construction	--	--	R-60	R-60	R-70	R-90	--	--	--	--
Average Construction	--	--	R-60	R-60	R-60	R-70	--	--	--	--
Neighborhood B - Present Zone = R-70										
Average Land Cost:										
Good Construction	--	--	R-70	R-60	R-70	R-90	--	--	--	--
Average Construction	--	--	R-70	R-70	R-70	R-80	--	--	--	--
Lowest Land Cost:										
Good Construction	--	--	R-60	R-60	R-70	R-90	--	--	--	--
Average Construction	--	--	R-60	R-60	R-60	R-70	--	--	--	--

Threshold Zones Required for New Residential Development After BART Impacts

Fruitvale Station Area

(sq. ft.)	Single Family Dwellings 1500	2000	Wood Frame Apartments 650	800	1000	1200	High Rise Apartments 650	800	1000	1200
Neighborhood C - Present Zone = R-70										
Average Land Cost:										
Good Construction	--	--	R-60	R-60	R-70	R-90	--	--	--	--
Average Construction	--	--	R-60	R-60	R-70	R-80	--	--	--	--
Lowest Land Cost:										
Good Construction	--	--	R-50	R-50	R-60	R-80	--	--	--	--
Average Construction	--	--	R-50	R-60	R-60	R-70	--	--	--	--
Neighborhood D - Present Zone = M-30 (Residential uses not permitted										
Average Land Cost:										
Good Construction	--	--	R-70	R-70	R-90	--	--	--	--	--
Average Construction	--	--	R-60	R-70	R-70	R-90	--	--	--	--
Lowest Land Cost:										
Good Construction	--	--	R-60	R-60	R-90	--	--	--	--	--
Average Construction	--	--	R-60	R-60	R-70	R-80	--	--	--	--

Table VII - 11 (cont'd)

Threshold Zones Required for New Residential Development After BART Impacts

Fruitvale Station Area

(sq. ft.)	Single Family Dwellings 1500	2000	Wood Frame Apartments 650	800	1000	1200	High Rise Apartments 650	800	1000	1200
Neighborhood E - Present Zone = M-30 (Residential uses not permitted)										
Average Land Cost:										
Good Construction	--	--	--	--	--	--	--	--	--	--
Average Construction	--	--	--	--	--	--	--	--	--	--
Lowest Land Cost:										
Good Construction	--	--	--	--	--	--	--	--	--	--
Average Construction	--	--	--	--	--	--	--	--	--	--
Neighborhood F - Present Zones = M-30 and M-40 (Residential uses not permitted)										
Average Land Cost:										
Good Construction	--	--	--	--	--	--	--	--	--	--
Average Construction	--	--	--	--	--	--	--	--	--	--
Lowest Land Cost:										
Good Construction	--	--	--	--	--	--	--	--	--	--
Average Construction	--	--	--	--	--	--	--	--	--	--

Threshold Zones Required for New Residential Development After BART Impacts

Fruitvale Station Area

	Single Family Dwellings		Wood Frame Apartments				High Rise Apartments			
(sq. ft.)	1500	2000	650	800	1000	1200	650	800	1000	1200
Fruitvale Avenue			Present Zones = R-70 & C-30 (R-70)							
Good Construction	--	--	R-80	R-70	R-80	R-90	--	--	--	--
Average Construction	--	--	R-70	R-70	R-70	R-80	--	--	--	--
E. 14th St. West of Fruitvale Avenue			Present Zone = C-40 (R-70)							
Good Construction	--	--	R-80	R-80	R-90	--	--	--	--	--
Average Construction	--	--	R-80	R-80	R-80	R-90	--	--	--	--
E. 14th St. East of Fruitvale Avenue			Present Zone = C-40 (R-70)							
Good Construction	--	--	R-80	R-80	--	--	--	--	--	--
Average Construction	--	--	R-80	R-80	R-80	--	--	--	--	--
E. 12th St. across from BART Station										
Good Construction	--	--	R-80	R-80	--	--	--	--	--	--
Average Construction	--	--	R-80	R-80	R-80	R-90	--	--	--	--

Source: Gruen Gruen + Associates Estimates

3. The construction of single family homes will generally not take place except perhaps by private owners seeking to development their own vacant lots.

4. No new residential construction will occur in neighborhoods "D", "E", and "F" since all three subareas are zoned for industrial use.

As has been done and explained for the other station areas, we can use the feasibility model designed in Chapter II to test the feasibility of new commercial development. Table VII-12 identifies the threshold floor-area ratios required for new office and retail development. Forecasts of future new development can be summarized from that table as follows:

1. There is little potential for new retail and office developments. In general land costs are out of line with forecasts of obtainable rents for the area. Thus until land costs drop, very little new construction will take place.

2. There will be some selected cases where land cost is quite low or where land has sat vacant for quite a while so that some small scale retail development will take place. This will include small convenience shops or eating places and services like car washes or laundramats where construction costs can be cut.

3. It does not appear that new medical offices will be built in the area.

Our specific land use forecasts do not include industrial uses because the types of plant and equipment and the amount of land required vary significantly by specific type of industry, making

Table VII - 12

Forecasts of Threshold Floor-Area Ratios
Required for New Commercial Development
after BART Impacts

Fruitvale Station Area

Major Streets	Cross Street Boundaries	General Retail Sales: Steel Frame AG	General Retail Sales: Steel Frame UG	General Retail Sales: Wood Frame AG	General Retail Sales: Wood Frame UG	Administrative and Professional Offices and Banks: Steel Frame AG	Administrative and Professional Offices and Banks: Steel Frame UG	Administrative and Professional Offices and Banks: Wood Frame AG	Administrative and Professional Offices and Banks: Wood Frame UG
East 14th Street	27th & Fruitvale	--	--	--	3	--	--	4	3
East 14th Street	Fruitvale & High St.	--	--	--	--	--	--	--	--
Fruitvale Avenue	E. 14th & Foothill	--	--	--	4	--	--	--	--
East 12th Street	Across from BART Station	--	--	--	--	--	--	--	4

AG - Above Ground UG - Underground Parking

Source: Gruen Gruen + Associates

it quite difficult to develop a general model to test feasibility of industrial construction. Further, it was determined earlier in this report that the impact on the demand for industrial space from the introduction of BART service will be minimal if it exists at all.

IDENTIFYING THE AMOUNT OF SPACE THAT WILL BE USED FOR FUTURE NEW DEVELOPMENT IN EACH STATION AREA

The discussion in Chapter III identifies the likely magnitude of the space that will be needed in the future throughout Oakland for different types of land uses. The discussion in the previous sections of this chapter forecasts the kinds of new residential and commercial development that will likely locate in each of the three station areas. Now, combining the macro (city) and micro (neighborhood) analyses it is possible to estimate the likely magnitude of the total demand for space that will be captured in each station area.

It is clear that few if any single family homes will be built in our areas. However, the potential for multiple units does exist in at least some locations in all three station areas. Our estimate for the City of Oakland was that over the next ten years approximately 17,000 unassisted multiple units will be constructed by the private market, or an approximate average of 1,700 units per year. It is likely that the new development forecast for the Rockridge neighborhoods after BART impact will represent from six to eight percent of these units or will include the construction of an average of approximately 100 - 140 new units per year. Though some residential construction will take place in parts of MacArthur and Fruitvale, the number of new units that will be constructed in each area will not be large. Our estimate would be that a maximum of around 250-300 new units will be built in each area, MacArthur and Fruitvale, over the next ten years. Of course, if development in those sections of MacArthur nearer to

Piedmont and Broadway continues to take place, the number of new apartment units in Mac Arthur will be larger.

Our estimate of the demand for future office space in the City of Oakland was for an addition of approximately 5,500,000 square feet between now and 1985. It seems reasonable that about 9,000 square feet per year could be absorbed in the Rockridge area with a maximum addition of about 120,000 - 150,000 square feet over the next fifteen years. In Fruitvale, only a limited amount of office space will be added since our forecasts concluded that little new office construction will take place. In MacArthur, the situation is more difficult to estimate. The potential for secondary office development does exist. However, that portion of the total space for the city that will be added in MacArthur will depend on the development downtown and at the airport, and on the relative strength of the Pill Hill medical center to continue to draw doctors and medical research facilities. The approximate range of space could vary from 250,000 to 400,000 square feet between now and 1985.

Earlier discussion of the demand for retail space indicated that it was very difficult to forecast that demand. Our analysis and forecasts for the neighborhoods suggests that very little new retail space will be added in Fruitvale, some will be added in MacArthur, and that the Rockridge area will experience a large addition of space, including remodeled space as well as new construction. As retail uses continue to be important in Rockridge and as the image of that area continues to improve as new shops come into the area and many of the existing ones stay and expand, we can foresee a demand for space that would range from what we would consider average for a community center, 150,000 to 250,000 square feet, up to that of approximately 400,000 to 600,000 square feet. Most likely, over the next fifteen years, the demand for additional retail space would be for around 400,000 square feet with an average annual addition of about 20,000 to 40,000 square feet.

The demand for industrial space is only considered in relation to the Fruitvale area. As was explained earlier, our interviewing and analysis in that area indicates that there will be a limited demand for additional space and that it will be likely that any new space will be that needed for remodeling or expansion of the existing industries.

IDENTIFYING THE COSTS OF REDEVELOPMENT

The procedures followed in using the model to determine the potential for new development can also be used to determine the costs of redevelopment in those cases where new construction is not feasible by private market forces.

In general, the level of obtainable rents determines the amount of money that will be available to cover land or site costs. If the amount is equal to or greater than the actual land or site costs at a particular location, development will be feasible. If the amount is less than actual costs, redevelopment can be used to lower actual costs to the level where new construction can take place.

This process of comparing allowable and actual land costs is the one used throughout this chapter to identify development potential. In every case in Table VII-3, VII-7 and VII-11 where development is indicated as not being feasible, the amount by which land costs must be lowered can easily be determined by calculating the difference between actual and allowable site costs. In some cases rents are not high enough to cover construction costs, much less land costs. To estimate the amount of subsidy needed in these cases, the actual land costs would be added to the difference between the capitalized value of rents and the construction costs.

The public redevelopment process can include the public purchase of property, the publicly financed demolition of the existing structures on that land, and the resale of the land to a developer. An estimate of whether or not such land can be resold at the current market price for vacant land in the area is given in those sections of the tables where the feasibility of new construction is tested at lowest land costs. If new development is feasible on these lower cost sites, public assistance to the extent of covering the capitalized value of existing structures and demolition costs will be all that is needed to encourage redevelopment in a specific area. However, if new development is not feasible in these cases, the amount of land "write-down" would have to be greater in that land would have to be resold at less than market price. In other words the amount of public subsidy would have to increase.

As explained, there are some cases in which estimated obtainable rents are not large enough to cover construction costs, much less land costs. Subsidies would then have to be very large in order to stimulate new investment. The approximate amount of subsidy can also be estimated with the help of the feasibility model.

The reader is encouraged to reconstruct some of the conclusions as to the required densities for feasible new construction shown in Tables VII-3, VII-7 and VII-11. The calculations required to determine those cases where new development is not feasible even at the highest density can also be used to calculate the amount of subsidy needed for new development in each case.

[illegible] public redevelopment process can include the public acquisition of property, the [illegible] of existing structures on that land, and the resale of the land to a developer. The estimate of what the land can be resold at the current market price [illegible] in the area is given in those sections of the tables where the feasibility [illegible] tested at lowest land costs. If new development is feasible on these lower land costs, public intervention to the extent of covering the capitalized value of existing improvements and demolition costs will be all that is needed to encourage redevelopment in a specific area. If new development is not feasible at these land costs, the [illegible] of land [illegible] would [illegible] the land would have to be resold at less than market [illegible] in order to make the [illegible] public subsidy would have to increase.

[illegible] explained, there are some cases in which estimated [illegible] densities are not large enough to cover construction costs, much less land costs. Subsidies would then have to be very large in order to stimulate new construction.

The approximate amount of subsidy can also be estimated with the help of the feasibility model. [illegible] The reader is encouraged to reconstruct some of the calculations [illegible] the required densities [illegible] new construction shown in Tables VII-3, [illegible] calculations required to determine the densities where new development is not feasible even at the highest density can then be used to calculate the amount of subsidy needed for new development in each case.

CHAPTER VIII

The Effects or Costs and Benefits of the Land Use Changes that will Occur Under Present Public Policy

This chapter presents a summary of the primary and secondary effects of the land use changes forecast in the previous chapter. The effects or results of the land use changes that will occur in the three areas we studied will impose a set of benefits and costs upon the people in the areas around the three BART stations, the City of Oakland and to some extent the residents of the San Francisco Bay Region. These results are summarized here so they can be evaluated by those who will be affected. As we will discuss below, the evaluation will vary with the perspective of the evaluator. But before the results are properly evaluated by anybody, it is critical that the applicability of the forecast presented in the previous chapter is understood.

THE CRITICAL ASSUMPTION ABOUT PUBLIC POLICY AND OTHER SIGNIFICANT EXOGENOUS FORCES

Our assigned task was to forecast the change in land use potential around the MacArthur, Rockridge and Fruitvale Stations, that would follow the introduction of the new Bay Area Rapid Transit System.

We proceeded toward this task by considering the impact of BART and all the presently identifiable other forces that would interact with BART to cause change. But in the initial analysis that is concluded in the previous chapter, we assumed that the central outside factors that constrain and influence both the impact of BART and other forces would not change from their present path.

By far, the most important of these constraints and influences is City policy. For purposes of our analysis we assumed that present City renewal, housing, capital improvement and other land

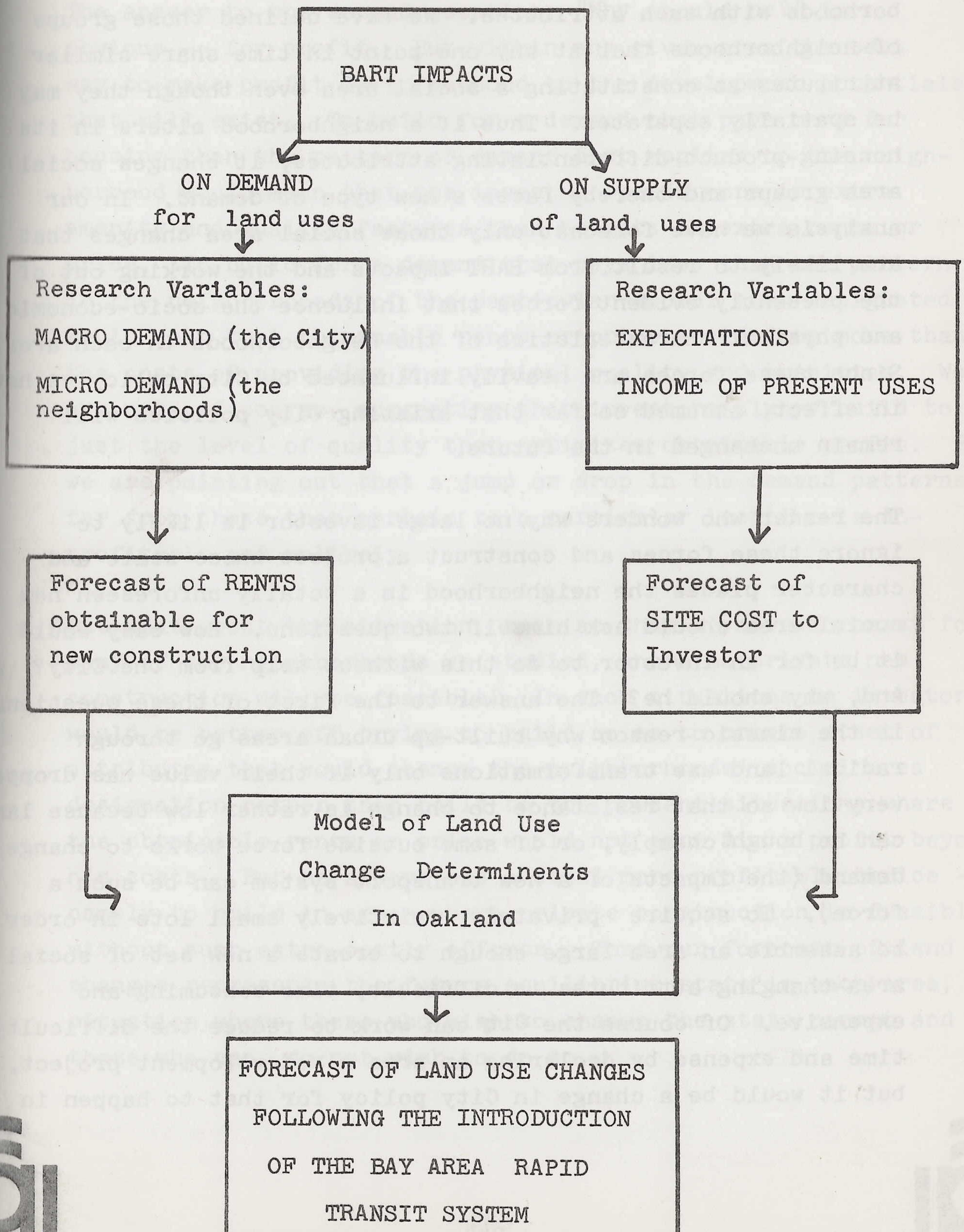
use - affecting policies would not change. We also assumed that no private development would be undertaken within any of the areas that would be of such a scale and character so as to change significantly the path of future demand for space in the area. For all practical purposes these two assumptions are one and the same for the three areas we studied, because no private developer is likely to build a project that totally changes the demand for space in the entire neighborhod without the type of public action that would reflect a change in public policy. Without the aid of the City through renewal action, a developer, even a large and well capitalized developer, would be better off responding to the likely future demand for space in the areas rather than seeking to totally change those demands.

Figure VIII-1 presents a diagram of the steps in research and analysis we followed to forecast the land use change potentials around the three BART stations. We refer to this diagram here to help clarify the nature of our assumptions about public policy and explain why in the absence of a change in public policy, the developers will respond to these potentials instead of creating other potentials in the neighborhood through their own actions.

As the diagram indicates, in order to forecast the demands for land use that will follow the introduction of BART we had to study the two critical sets of variables that are impacted by BART. These demand variables include the macro variables that influence the demand for space in each of the neighborhoods that we found to exist in the areas around the stations. The supply variables we studied in order to gauge the costs of construction sites to would-be investors included the influence of expectations and the type of investor or implicit homeowner income now being generated by the uses now covering the land in the three areas. Let us turn back to the demand variables and consider the case of residential uses to provide an example of our public policy assumptions and their importance.

Figure VIII-1

Steps Taken to Forecast the Land Use Change Potential Around Three New BART Stations



As we discussed in Chapter 1, the demand for residential land use in any specific neighborhood is a function of the particular housing-product-differentiating attributes that housing seekers perceive to exist in the neighborhood, and the market-wide supply and demand relationships that pertain in all the neighborhoods with such attributes. We have defined those groups of neighborhoods that at any one point in time share similar attributes as constituting a social area even though they may be spatially separated. Thus if a neighborhood alters in its housing-product-differentiating attributes, it changes social area groups and thereby faces a new type of demand. In our analysis we have forecast only those social area changes that are likely to result from BART impacts and the working out of the presently evident forces that influence the socio-economic and physical characteristics of the neighborhoods in each area. Since these forces are heavily influenced by City policy we have, in effect, assumed so far that existing City policies will remain unchanged in the future.

The reader who wonders why no large investor is likely to ignore these forces and construct a project whose scale and character places the neighborhood in a totally unforeseen new social area should ask himself two questions. How easy would it be for an investor to do this without help from the City? And, why should he? The answer to the first of these questions is the classic reason why built-up urban areas go through radical land use transformations only if their value has dropped very low so that resistance to change is rather low because land can be bought cheaply, or if some outside force works to change demand (the impacts of a new transport system can be such a force). To acquire privately, relatively small lots in order to assemble an area large enough to create a new set of social area-changing attributes is difficult, time consuming and expensive. Of course the City can work to reduce the difficulty, time and expense by declaring an area a redevelopment project, but it would be a change in City policy for that to happen in

any of the areas we studied. Here as was discussed before we are assuming that any area that has not been declared a redevelopment area would require a change in City policy for it to be so designated.

The answer to the second question, "Why should he?" is obvious -- for profit. But within any given area the best way to make profit is to respond to the development potentials that will exist. To build for a demand that pays more for housing than the pattern of demand that applies to the neighborhood would mean that the investor spends more on extra amenity and quality features than he gets in extra rents or price. To build for a demand that pays less than the pattern in the neighborhoods of the particular social area designated would mean that obtainable rents or price would drop more than the costs of providing the physical quality and amenities. We are not, of course, suggesting that investors always build to just the level of quality that optimizes obtainable profit. But we are pointing out that a jump or drop in the demand patterns far from those that pertain to a particular location is unprofitable and unlikely.

But what about the situation, such as that we have forecast for many of the neighborhoods we studied, where no private new construction will be feasible? In such situations an investor would be better off trying to build so as to create a set of attributes that would change the neighborhoods' social area designation rather than build to the present situations where the obtainable rents or price would not earn him a profit beyond his costs. But he always has a still more profitable choice -- namely to build in areas where private construction is feasible without such extra-costly efforts. Thus our forecast of land use changes represents the future equilibrium state in each area, a situation where those who wish to change the state cannot and those who can, do not wish to do so.

However, the equilibrium is only forecast for the continuation of present City policy. If the zoning and other public ground rules spelled out in Chapter II, (which presents a model of land use change determinations in Oakland) are altered, then a new equilibrium will develop. The model is presented not only to explain our approach to making the equilibrium forecast but also to provide the City with a tool for considering the impact of changes in its policy. Drastic changes in City policy could bring drastic changes in land use; for example, the utilization of urban renewal eminent domain powers and/or subsidies could make it possible to change the social area designation of the area through a renewal project that cleans out a large area and makes a "new neighborhood".

Of course, no change in public policy should be made unless the net benefits of changing the policy exceed the net benefits of the present policy. In other words, the City should not alter the present path of land use and social change unless the results of another policy would be sufficiently more desirable to warrant the costs associated with the change in policy. To do this the City must first know what the results, or costs and benefits, of the present policy will be. These must then be compared to the results, or costs and benefits, of alternative policies. This chapter takes the present policy forecast and indicates the significant results that are likely to follow from it. The next chapter presents some alternative public policies and presents our judgment of the economic feasibility and results of these alternatives.

THE ACTUAL EFFECT OF LAND USE CHANGES

Two types of final effects create the results that constitute the costs and benefits of any policy, or in this case, of those series of actions and inactions concerning land uses that we have forecast. Primary effects cause those results that stem directly from the creation, preservation, or alternation of the land uses. Thus the provision of shelter of a given quality at a given price is the

primary effect or result of creating an additional dwelling unit. A drop in housing quality and a change in price is the long run primary result of undermaintaining a dwelling unit. Shopping use is the primary effect of increased retail land uses.

Secondary effects are those that result from the presence of the created, altered and preserved land uses as they are used. Thus for example, the congestion that flows from many more people shopping in added retail space is a secondary effect, as is the increased service need if more poor people move into a neighborhood as the quality and value of residential land uses decrease.

How heavily to weight the costs and benefits that are the results of a particular primary or secondary effect depends to a great extent on who is doing the weighting. The addition of housing means more to someone who is looking for a house than it does to a presently well-housed individual. In some cases whether or not an effect is a cost or a benefit will also depend upon who is doing the evaluating. The dropping of housing value, even if it is partially due to undermaintenance, is a benefit to a poor family looking for housing while it is a cost to other taxpayers who see a drop in the assessed valuation of the property.

Because of this difficulty and the inherently subjective nature of any evaluation, or even separation of effects into costs and benefits, the Oakland City Planning Department has asked that we identify and indicate the direction of the primary and secondary effects that will flow from the pattern of land use changes that we forecast to apply to the three areas surrounding the new BART stations.

Tables VIII-1, VIII-2 and VIII-3 present these effects as they will pertain to the MacArthur, Rockridge and Fruitvale Areas. Definitions of each type of effect follow the tables. The City Planning Department will work with the residents of these three areas and consider the interests of other affected groups to evaluate these effects in terms of their costs and benefits.

Table VIII - 1

Estimated Primary and Secondary Effects of Future Land Use Changes in the MacArthur Station Area Under Present Policy

+ = increase
\- = decrease
= = equal or unchanged
Δ = change

	Neighborhood					
	A	B	C	D	E	F
Primary Effects:						
Housing Quantity	=	+	+	+	=	=
Housing Quality	=	=	=	+	-	-
Housing Price and Rent	=	=	+	+	-	-
Retail Facilities of the Types New Present	=	=	+	=	=	=
Additional Types of Retail Facilities	=	=	=	=	=	=
Office Space	=	=	+	+	=	=
Industrial Space	=	=	=	=	=	=
Secondary Effects:						
Assessed Valuation	=	+	+	+	-	-
Social Service Costs	=	=	=	=	+	+
School Enrollment	=	=	=	-	=	=
Traffic Congestion	=	+	+	+	=	=
Congestion of Recreational and Park Facilities	=	+	+	+	=	=
Net Fiscal	=	=	+	+	-	-
Social Make-Up of Area	=	=	=	Δ	Δ	Δ
Overall Environmental Quality	=	=	=	+	-	-

Source: Gruen Gruen + Associates

Table VIII - 2

Estimated Primary and Secondary Effects of Future Land Use Changes in the Rockridge Station Area Under Present Policy

+ = increase
- = decrease
= = equal or unchanged
Δ = change

	Neighborhood						
	A	B	C	D	E	F	G
Primary Effects:							
Housing Quantity	+	+	+	+	+	+	+
Housing Quality	=	=	=	-	=	-	-
Housing Price and Rent	+	+	+	-	=	-	-
Retail Facilities of the Types New Present	+	+	=	=	+	=	=
Additional Types of Retail Facilities	+	+	=	=	=	=	=
Office Space	+	+	=	=	+	=	=
Industrial Space	=	=	=	=	=	=	=
Secondary Effects:							
Assessed Valuation	+	+	+	=	+	+	-
Social Service Costs	=	=	=	=	=	+	+
School Enrollment	-	-	=	=	=	=	=
Traffic Congestion	+	+	+	+	+	=	=
Congestion of Recreational and Park Facilities	+	+	+	+	+	+	+
Net Fiscal	+	+	+	=	=	-	-
Social Make-Up of Area	=	=	=	Δ	=	Δ	Δ
Overall Environmental Quality	+	+	+	=	=	-	-

Source: Gruen Gruen + Associates

Table VIII - 3

Estimated Primary and Secondary Effects of Future Land Use Changes in the Fruitvale Station Area Under Present Policy

\+ = increase
\- = decrease
= = equal or unchanged
Δ = change

	Neighborhood					
	A	B	C	D	E	F
Primary Effects:						
Housing Quantity	+	+	+	=	-	-
Housing Quality	=	=	=	-	-	-
Housing Price and Rent	=	=	=	-	-	-
Retail Facilities of the Types New Present	+	=	=	=	=	=
Additional Types of Retail Facilities	=	=	=	=	=	=
Office Space	=	=	=	=	=	=
Industrial Space	=	=	=	=	+	+
Secondary Effects:						
Assessed Valuation	=	=	=	-	-	-
Social Service Costs	=	=	=	+	+	+
School Enrollment	=	=	=	=	=	=
Traffic Congestion	+	+	+	+	=	=
Congestion of Recreational and Park Facilities	+	+	+	=	=	=
Net Fiscal	+	+	+	-	-	-
Social Make-Up of Area	=	=	=	Δ	Δ	Δ
Overall Environmental Quality	=	-	-	-	-	-

Source: Gruen Gruen + Associates

Primary Effects

Housing Quantity: indicates whether or not there will be a change in the number of dwelling units in each neighborhood. This effect is determined directly from the forecasts for new construction in Chapter VII. + indicates additional units, = indicates no significant change.

Housing Quality: indicates whether the overall quality of dwelling units in each neighborhood will increase as a result of new construction or remodeling and renovation, whether the overall quality will decrease because of dterioration, or whether the area will be preserved as is. This measure of overall housing quality describes the, total effect of all of the various pressures for changes in the quality over time. + indicates improvement, = indicates no change or preservation, - indicates decline.

Housing Price and Rent: indicates whether or not rents and home values will change as a result of a change in the desirability of the neighborhood area. + indicates an increase, = indicates no change from present levels, - indicates a decrease.

It should be noted that rents and prices will move in the same direction. It is possible that at a certain point in time the pressure on one type of unit (owned units for example), will be going up faster than the pressure on the other type, (rental units). This would result when the demand for owned units goes up faster than the supply of such units while the relationship of demand and supply for rental units will be much more in line with each other. Nevertheless, the general direction of rents and prices will move together because both stem from the desirability of the particular area.

Retail Facilities of the Types Now Present: indicates if the quantity of rental space will increase <u>and</u> that this increase will be accommodated in facilities that are of the same general scale and density as existing retail facilities in each subarea, + indicates increase, = indicates an unchanged siutation, - indicates a decrease in the amount of space in facilities like those that now exist there.

Commercial streets are included in the neighborhood subarea through which they pass. If one street passes through one or more neighborhood areas that portion of it in each neighborhood is included in that neighborhood designation.

Additional Types of Retail Facilities: indicates whether or not there will be new retail space that will locate in facilities that do not conform with the existing scale and density of existing commercial areas; thus tending to change the scale of that street or area. △ indicates change, = indicates no change.

Office Space: indicates whether the quantity of office space will change. + indicates an increase, = indicates no change, - indicates a decrease in amount of existing space as some uses will locate or cease operation.

Industrial Space: indicates if the amount of industrial space will change. + indicates an increase, = indicates no significant change, - indicates a decrease.

Secondary Effects

Assessed Valuation: indicates whether the total assessed valuation of properties in each neighborhood will change as result of new construction in the area, the addition of new housing units, commercial space and industrial space, changes in the overall quality of development there, and/or changes in the desirability and thus, house prices and rents there. + indicates an increase, = indicates no significant change, - indicates a decrease.

Social Service Costs: indicates whether the costs of providing social services will increase as a result of changes in the number of residents and in differences in the needs and income levels between future residents and existing residents. + indicates overall costs for the neighborhood will increase, = indicates no significant change, - indicates overall costs will decrease.

School Enrollment: indicates if the number of school age children will change in each neighborhood. + indicates an increase in enrollment, = indicates no significant change, - indicates a decrease.

Traffic Congestion: indicates if traffic congestion will increase as a result of increased activity in an area related to BART patronage, new development and changing patterns of activity. + indicates an increase, = indicates no significant change, - indicates a decrease.

Congestion of Recreational and Park Facilities: indicates if there will be an increase in the amount of use of the existing park and recreational facilities to the point where they will become overcrowded or where an already overcrowded situation will be further exaggerated. + indicates increased congestion, = indicates no significant change from the present situation, - indicates that usage will decrease.

Net Fiscal: indicates the direction of changes in the relationship between the costs of providing public services and the revenue generated from tax receipts to cover such costs. + indicates that revenues will increase by a greater amount than will costs, = indicates that neither both costs nor revenues will not change or that they will both change in the same direction, - indicates that costs will increase by an amount that is greater than increases in revenues.

It is difficult to estimate the net fiscal effects without knowledge of the overall impact of changes in the three areas studied in relation to changes for the city. We do not have enough information to know how much of the demand that maybe captured in our three areas will merely be shifted from other areas of Oakland and how much will actually be an addition for the city.

Social Makeup of Area: indicates if the social characteristics of the neighborhood residents as discussed in Chapters IV, V, and VI will change as a result of changes in the social characteristics of the future residents that most likely will move into the area. It is a general indication of changes in average age, family size, minority population, and average income. Δ indicates change, = indicates no significant change from the present situation.

Overall Environmental Quality: indicates if there will be a change in the overall quality of the environment in each neighborhood including amenity level and visual appearance. Such changes would include the addition of the freeways, the addition of trees and landscaping, changes in the noise and air quality level, as well as changes in the general structural quality of all buildings there. + indicates improvement, = inciates no change from the present situation, - indicates a decrease in quality.

Net Fiscal: Indicates the direction of changes in the rela-
tionship between the costs of providing facilities
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CHAPTER IX

An Evaluation of Several Public Policy Alternatives Suggested for Each Station Area

Having studied the demand effects of the economic, social and physical impacts of BART's introduction into each station area, we have described the circumstances and forecast the development potential that will apply to the areas around the MacArthur, Rockridge, and Fruitvale BART stations. We have also identified those areas and neighborhoods where no significant potential for new development exists unless spurred by public actions and policy changes. We have identified and described the primary and secondary effects of the development alternatives that are likely to occur under present policies. In addition we have forecast the future economic trends that will pertain to the land uses and social make-up of the areas where no potential for new development exists unless new public actions or policy changes are initiated.

It is the purpose of this chapter to consider the economic feasibility and the general nature of the effects of various tentative public policy alternatives that have been postulated by the City Planning Department, and to evaluate the required scale and probable success of the public actions that have been suggested under each alternative.

THE NATURE OF POSSIBLE PUBLIC ACTIONS

There is a wide range of public actions that can be carried out under various public policy alternatives, including actions which are designed to preserve as well as those which are designed to cause change. The choice of the specific set of actions to be included in each case depends largely upon the goals or end-states to be achieved or preserved by the alternative and the

nature of the existing market forces with which the public actions must interact.

At the one extreme, there are those public actions which are designed to remove certain artificial or minor rigidities in the market by using public powers to permit or stimulate the operation of private market forces. These actions usually require fewer resources, and include such things as zoning changes and relatively minor environmental improvements like tree planting. These types of actions are especially appropriate for those alternatives where the potential for achieving the desired goals largely exists in the private market although some public actions and guidance is required.

At the other extreme, there are those public actions which are designed to completely change one or more of the existing market forces so as to dramatically change or reverse an existing trend or situation. These types of actions usually require a large investment of public funds, involve public participation over an extended period of time, and usually affect a large project area and a large number of residents and/or merchants. Such actions would include large redevelopment projects involving clearance of some existing land uses and subsidies to build new uses. In general, these types of actions are appropriate for those alternatives where it is necessary to completely change the existing demand forces by creating an entirely new neighborhood social area with different social, economic and physical attributes, and where such changes cannot be achieved by the private market.

In between these extremes there are many other types of actions requiring various degrees of public participation and more or less reliance on private market forces. Examples include concentrated code enforcement or rehabilitation programs and major public capital improvements.

In deciding among the public actions to be included in a particular alternative scheme, it is generally most desirable to choose the combination of actions which will be able to achieve the desired goal or end state with the least public involvement and the maximum dependence on the private market. Because public funds are limited, it can be argued that they should be distributed as widely as possible among projects that have the best potential for producing the highest return (benefits) on each dollar invested. The task of deciding the extent to which public involvement can be used to supplement the private market in achieving a goal rather than replacing it is difficult. However, it is necessary to answer that question before being able to make a knowledgable choice among public actions.

Further, the decision-making process involved in allocating limited public funds goes several additional steps beyond the answer to this question of alternative actions. Also, and more basically it is necessary to consider the goals or end-states of different alternatives themselves and the types of primary and secondary effects that will be created in each case.

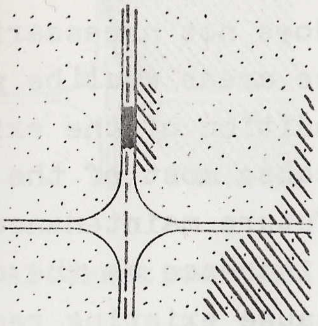
DESCRIBING AND EVALUATING VARIOUS TENTATIVE PUBLIC POLICY ALTERNATIVES

The alternative concepts described and evaluated here are considered as examples of how the information developed throughout this report can be used in the conceptualization and evaluation of alternative public policies. In the sections which follow we indicate generally the extent to which the private market conditions identified throughout this report could make an alternative happen given the particular set of public actions described in each case. We also indicate the extent to which public involvement would be necessary and give a general indication of the types of effects which would accrue for each alternative. However, to determine the specific set of public actions

which would lead to the achievement of the goal or end-state as described for each alternative in the most "beneficial" and least "costly" way would require more in-depth analysis into the specifics of each particular case.

The analysis included here for each alternative begins the task of defining and refining alternative concepts and actions among which those that are most desirable will be selected for more in-depth planning analysis. Having this general knowledge of how the alternative might be achieved permits the community and the City to review these concepts and actions and decide among their priorities. In other words, by knowing what can generally be done to achieve these options, the community and the City can zero in on the types of features or planning aspects that seem best to fit with the goals of the neighborhoods and the communities. By further narrowing down and refining the alternatives, it will be easier to detail the marketing, economic and physical parameters that pertain to these more narrowly defined objectives in more depth.

In the following sections, four or five alternatives, developed by the City Planning Department, are described for each of the three station areas included in this study. The major dimensions of each alternative will typically include the types of land uses to be encouraged (or discouraged), the general locational pattern of these uses; something of the rationale for the alternative; and a general description of the public actions involved (stating, especially, whether a redevelopment project is or is not assumed). To illustrate each alternative, there is a schematic diagram in the margin. The written description of each alternative appears indented and single spaced on the page. Following each such description our evaluation of it appears in the terms described earlier.



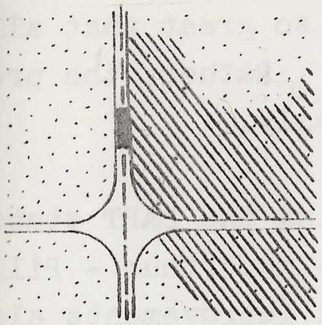
Alternative M-1

Alternative M-1: Minimum Growth and Maximum Preservation: This alternative would seek to keep most of the MacArthur area in low-density development, as well as to maximize preservation of the area's existing housing and neighborhoods. According to the alternative's rationale, minimizing growth would alse serve the preservation goal by reducing economic pressures on existing properties and controlling the burden on public facilities. Only a few sections (such as along major streets) would provide for higher density construction. New office, retail and apartment construction would be expected to occur mostly in the already established Pill Hill and Broadway sections...Public actions would emphasize extensive "downzonings" of allowable housing density on both sides of the Grove-Shafter Freeway. There would be various environmental improvements such as tree planting, and perhaps a new feeder bus system (possibly free) connecting the station with Pill Hill and Broadway. There would be concentrated code enforcement or comparable efforts at least, west of the freeway, but no redevelopment.

The public actions included in this alternative would limit new residential construction to only the Pill Hill and Broadway sections of the study area. Significant downzoning of most residential areas on both sides of the freeway to R-40 for example, would preclude private housing construction there. As we have determined, such new construction would only be feasible at higher densities. However, the actions would not significantly affect new commercial development and some office and retail construction wouldtake place on Pill Hill and on Broadway and West MacArthur near to Mosswood Park as has already been forecast. In fact, environmental improvements and a feeder bus system connecting the BART station to the existing agglomerations of activity would enhance the desirability and thus the potential for com-

mercial development in the immediate vicinity of the station, along the route from the station to the MacArthur - Broadway - Pill Hill area, and at this latter location.

Minimum growth in the residential areas does not necessarily mean that the existing structures in these areas would be preserved and that the overall image and condition of the existing neighborhoods would remain unchanged. Because most of the existing units are in older structures, future maintenance and remodeling expenses would be high and may increase as the age of the structure increases. Further, because existing rents and home values are relatively low, especially in neighborhoods "E" and "F" on the west side of the freeway, the existing condition of at least some units is not good. Also, we have identified that some of the residents in the area are there because their housing options are limited by their ability to pay for it. This is especially true for neighborhood "E" and to some extent neighborhood "F". Therefore, some type of concentrated code enforcement program would definitely be necessary to help these owners and to prevent further structural deterioration. Such a program would probably be needed in some sections of neighborhoods "B" and "C" as well as in "E" and "F". However, over the longer run, the desirability of the area, especially west of the freeway and in neighborhood "E", would not change significantly so that the percentage of residents who are unable to meet housing expenses would most likely not decline, necessitating some continuing public program to help "preserve" the area. This would be important because "downward" pressures in the quality of the residential neighborhoods would lessen the desirability of the area for future commercial land uses and the potential for future commercial development would be effected.



Alternative M-2

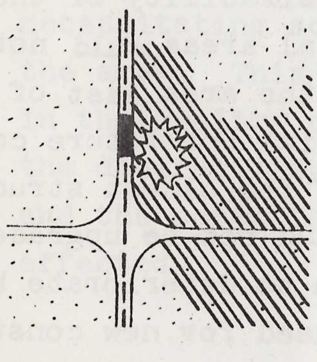
Alternative M-2: High Density East of the Freeway (Without Redevelopment): This approach would recognize the section west of the Grove-Shafter Freeway as a low density area, but would provide for major new construction east of the freeway. The alternative assumes that the BART station would provide a magnet that would extend over the latter area the positive economic forces already found on Pill Hill and Broadway. The new construction would hopefully include high and medium-density apartments -- and substantial office, and some retail, development (near the station as well as on Pill Hill and Broadway)... Public actions would include extensive residential downzonings (especially west of the freeway) and other zoning changes. There would be various environmental improvements, and possibly a new feeder bus system linking the station with the sections to the east. There would be concentrated code enforcement or the like, at least west of the freeway, but no redevelopment.

As explained in Chapter VII, some incremental residential and commercial development will take place east of the freeway in neighborhoods "B", "C", and "D" and in the Broadway area. This alternative would allow for this development and would encourage it by providing some environmental improvements throughout these areas. New residential construction that is well maintained would have a positive effect on improving the desirability of the neighborhoods. Although the existing social areas would not change significantly the overall image of the area east of the freeway would improve, enhancing the potential for future commercial uses. There is a danger that some of the oldest structures or those that are least well maintained would not be upgraded in this process and that owners may allow them to deteriorate hoping that they will be purchased and the site used for new construction in the future. If this process begins to happen at several different locations the overall benefits to be gained from new

construction may be nullified by this deterioration. This is especially true because the demand is not so great that all new development would happen rapidly. Rather, the process would be slower and will develop incrementally.

There would be definite advantages to linking the BART station to the existing activity in the Broadway - MacArthur - Pill Hill area. Such a plan along with environmental improvements along the route would help to encourage BART patronage and to bring more people into the area. Special consideration given to improving the areas of Telegraph Avenue near to the station would be very important in encouraging the use of the feeder bus service and in strengthening the Telegraph commercial area.

There would be little change in the existing conditions to the west of the freeway if a code enforcement or housing rehabilitation program is undertaken in neighborhoods "E" and "F". As described in Alternative M-1, there are pressures for change in these older neighborhoods, especially "E", that must continue to be controlled over the longer run so that the number of residents who are unable to meet housing and maintenance expenses would not increase significantly so that it would be more difficult and more costly from the public's point of view to help "preserve" these areas.



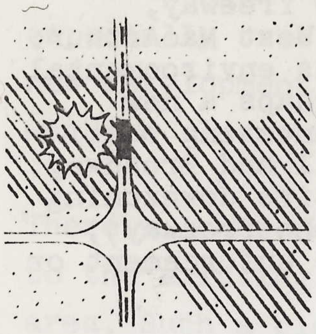
Alternative M-3

Alternative M-3: High Density and Redevelopment East of the Freeway: Like Alternative M-2, this concept would recognize the section west of the freeway as a low-density area but provide for major new construction east of it. However, a more massive effort would be made to encourage the latter. New construction would include high and medium-density apartments -- and substantial office, and some retail, construction... Public actions would feature a major redevelopment project east of the

freeway, possibly on the "superblock" bounded by the freeway, 40th, Telegraph, and West MacArthur. There would be various environmental improvements, and perhaps a new feeder bus system connecting the station with Pill Hill and Broadway. There would be extensive downzoning (especially west of the freeway), and concentrated code enforcement or the like.

For the MacArthur area, this alternative could be the most successful one in terms of using public actions to stimulate private investment and to relate this development to BART patronage. It would probably be successful in extending the "image" and demand now found in the Pill Hill - MacArthur - Broadway agglomerations and the adjacent Piedmont Avenue section, to the vicinity of the station, and stimulating new development in the areas in between. A clearance project on the above described "superblock" should be able to attract new office and convenience retail development (and if desired, apartment facilities), and act as a catalyst for other new development nearby. A new feeder bus system that would link the station to Pill Hill via the MacArthur - Broadway area, would be quite helpful in encouraging such development. Environmental improvements along the feeder bus route, and especially along Telegraph Avenue near the station would also help. It is likely that as new commercial development, including some secondary office space, comes in and the area generally improves, residential development, primarily medium-and high-density apartments for middle-income residents, would be encouraged to locate in the neighborhoods to the east of the freeway.

However, because of the boundary effect of the freeway, there would still be very little impact west of it and actions would have to be taken to assist owners in the maintenance and improvement of existing properties there. The same general approach described for this area in alternatives M-1 and M-2 would again apply here.



Alternative M-4

Alternative M-4: High Density on Both Sides of the Freeway (With Redevelopment on the West Side): This approach would seek to take advantage of the increased accessibility the station provides on both sides of the freeway. It would assume that the section east of the freeway can develop more or less on its own, but that almost nothing will happen to the west without massive efforts. Accordingly, this alternative would seek to sharply improve the physical environment west of the freeway. It would provide for high and medium-density apartments -- and substantial office, and some retail, construction -- on both sides of the freeway... Public actions would emphasize a major redevelopment project west of the freeway, as well as concentrated code enforcement or the like. There would be various environmental improvements and zoning changes and perhaps a new feeder bus system, on both sides of the freeway.

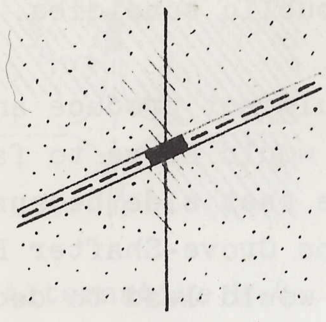
This alternative is designed to revitalize the area west of the freeway, thereby also serving to protect and encourage major new development in the section east of the freeway without the need for major public intervention there. However, there would be difficulties in achieving these results.

To be successful, the redevelopment project necessary to accomplish the desired end-states would have to involve a massive investment of public funds and would have to include clearance and redevelopment on a fairly large scale along Grove Street and the adjoining blocks. However, even with redevelopment on this large a scale, it would be difficult to create a new social area there and especially one that would be able to support new residential and commercial development. Physically neighborhood "F" is separated by the Grove-Shafter Freeway from the neighborhoods to the east so that its "image" would continue to be associated largely with the neighborhoods to the west. Further, there is no

existing agglomeration of commercial activities with which the redeveloped area could become associated. Therefore, developers would be somewhat reluctant to come into the area and much of the new development would have to depend on public subsidies.

Improvements made west of the freeway would not produce any significant positive spill-over effect that would serve to facilitate major new private development on the east side because of the strong boundary effect provided by the Grove-Shafter Freeway. The actions west of the freeway probably would lead to decreases in crime and vandalism throughout the area. However, new development on the eastern side would be that forecast in Chapter VII unless there are the kinds of environmental improvements considered in alternatives M-1 and M-2 as well as a new feeder bus system. Actions to link the existing activities and agglomerations of the Pill Hill - MacArthur - Broadway area to the station would be supported by improvements and a new feeder bus service on the western side serving to link the residential areas there to the BART station. Thus the total amount of traffic to and from the station area would increase, increasing the total market potential for new commercial development in the adjoining blocks on Telegraph. However, except for this possible increased market potential, new development in neighborhoods "B", "C", and "D" would be very similar to that described in alternative M-2 if the residential zoning is not changed and similar to that for M-1 if the areas are downzoned.

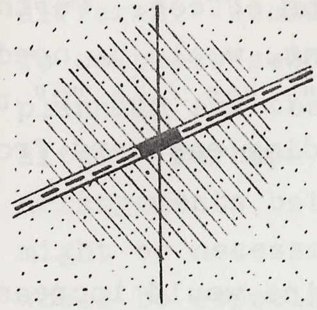
Rockridge Station Area Alternatives



Alternative R-1

Alternative R-1: Minimum Growth and Maximum Preservation: This approach would seek to keep nearly all of Rockridge as single-family houses. This, it would be argued, would seek to maximize preservation of the area's desirable physical character and social stability and to minimize traffic increases on the area's narrow streets. Only a few sections (such as along major streets) would provide for apartments and even there high-rise buildings would be prohibited. The alternative would try to enchance the existing pattern of small scale "Union Street" specialty and convenience shops along College Avenue; large-scale office construction which could destroy this pattern, would be excluded... Public actions would emphasize extensive "downzoning" of residential densities and other toughening of development controls, as well as a variety of environmental improvements (for example, buffering along the freeway and tree planting). Possibly there would be concentrated code enforcement or comparable action in some sections, but no redevelopment.

This alternative would serve to limit both residential and commercial development to smaller-scale projects and would encourage maintenance and remodeling of the existing structures. Such limits on new development would prevent significant changes in the Rockridge "character", and would keep rents from increasing sharply, thereby making it easier for middle-income families and marginal retail stores to remain there. Restrictive zoning in combinations with demand pressures would tend to increase existing rents somewhat, but these increases would not be nearly as great as those which would result if higher paying, larger scale new development were allowed to be built in the area. Furthermore, this alternative would indeed serve to restrict increases in locally-generated traffic.



Alternative R-2

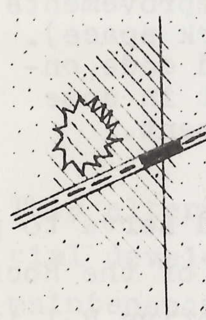
Alternative R-2: Scattered Low-Rise Apartments; This concept would sprinkle a substantial number of low-rise apartments (and possibly townhouses) among the existing single-family houses, in most sections of Rickridge within easy walking distance of the station. An argument for this pattern is that it would allow apartment dwellers to live near the station, yet in quieter, more spacious surroundings than if the apartments were clustered tightly together. Hopefully, the new apartments could be kept harmonious, in scale and design, with the neighboring houses. The alternative would also seek to preserve and enhance the pattern of small-scale convenience and "Union Street" shops along College, though perhaps allowing a little more intensive development than under Alternative R-1...Public actions would emphasize improved apartment design standards and other new zoning provisions, as well as a variety of environmental improvements (possibly including new park space). There might be concentrated code enforcement or the equivalent in some sections, but no redevelopment.

Like the previous option, this alternative would serve to protect the existing low-density, small-scale character of the Rockridge neighborhoods. It would differ from the Alternative R-1 in that it would allow more new residential units and would encourage them to intersperse within many of the existing single-family neighborhoods. If these new units were designed well, were of low-density and height, were well landscaped and maintained, and were carefully designed to be attractive additions to the neighborhoods, they would enchance the area and its image, allowing for some growth with a minimum of added congestion.

The density and design contols that would apply to the construction of these units would increase the costs of construction, so that the subareas most likely to generate the rents necessary to

support them would be neighborhoods "A", "B", "C", and parts of "D" and "E". Environmental improvements such as trees, added park facilities, and special buffering along the freeway would be necessary and quite important to the total effect. Further, a code enforcement program or the equivalent, would be needed in at least portions of neighborhoods "D", "E", "F", and "G" to prevent deterioration pressures from spreading eastward from Telegraph.

The demand for neighborhood retail facilities would increase somewhat as a result of the added number of residents, who would most likely be middle and upper-middle income households, and because of the general improvement in the area. Again, these establishments could be smaller scale and could locate in the existing structures.



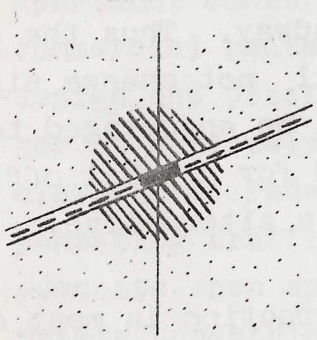
Alternative R-3

Alternative R-3: Low-Rise Development West of College Avenue: This concept would reserve much of Rockridge (including most of the generally higher-value sections east of College) for single-family houses, but would actively encourage major new low-rise apartment and townhouse projects west of College. The latter would be intended for middle to upper-middle incomes, and would be carefully designed to incorporate "Rockridge" themes and scale. As for commercial uses, this atlernative would seek to preserve and enhance the small-scale convenience and "Union Street" shops along College... Public actions would involve one or two land assembly projects west of College. There would also be extensive "downzoning" and toughening of development controls; a variety of environmental improvements; and possibly in some sections, concentrated code enforcement or the equivalent.

This alternative provides a good, workable strategy for protecting the low-density areas east of College Avenue by encouraging the right kind of development west of College. For such a plan to be successful over the long run, would require well designed, well

maintained new development at various locations in neighborhoods "D", "E", "F" and "G". Locations along Claremont Avenue would be especially appropriate, since this street presently divides two different social areas and provides highly visible building sites. To complete such a concept successfully would require careful planning and the assembly and rebuilding of at least some large sites. Perhaps the latter could be achieved through cooperative arrangements between owners and builders, but public involvement might be necessary, at least to facilitate land assembly. This would be especially true if townhouse and garden apartments of very low density were to be built. Environmental improvements and, in sections, code enforcement or the like would also be needed.

This concept offers an excellent strategy for improving the quality and image of the entire Rockridge area as a middle-income residential community. As a result, the area east of College Avenue would continue to be maintained and upgraded through private investment. New retail establishments would be attracted along College Avenue.



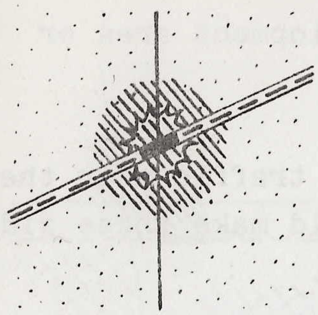
Alternative R-4

Alternative R-4: High-Rise Apartment Cluster Around the Station (Without Redevelopment): This alternative would seek to take advantage of the high accessibility right near the station. There would be a fairly tight cluster of low-rise and high-rise apartments surrounding the station, on both sides of College. There would be substantial new retail and office construction along College especially near the station, although hopefully the "Union Street" theme would continue...Public actions would involve selective "upzoning" to allow high-rise, balanced by downzoning of good single-family sections farther from the station. There would also be improved design controls; various environmental improvements (including new park space); and possibly in some sections, concentrated code enforcement or the like. However, there would be no redevelopment.

High-rise residential development would already be economically feasible along College Avenue and in neighborhoods "A", "B", "C", "E" and to some extent "D" if the present zoning were changed to allow this. However, such high-density construction could aggravate traffic problems unless the new units were carefully located and offsetting circulation changes or improvements could be made. The large new buildings would need to be carefully designed to maximize their compatibility with existing small-scale development. However designed, though, their scale would be bound to change somewhat the character of Rockridge as well as contribute to population growth and increases in the need for public facilities.

The demand for retail facilities would increase somewhat as a result of the added number of residents many of whom would most likely be in the uppper-middle-and middle-income categories. Rents and land values would increase somewhat in the immediate vicinity of the new development. Those retailers with the ability to pay the highest rents will locate closest to the station and add to what would be a new focus of activity. Retailers who are unable to pay the higher rents including many of the existing merchants, will locate further from this center point especially along College between the station and Broadway. Thus the scale and character of retail establishments will not change significantly. Service oriented office uses will be encouraged to locate in the area, but an increase in the demand for general office space will not necessarily result from this alternative.

There would be relatively little new construction in most of the sections below College Avenue toward Telegraph and there would continue to be pressures for structural deterioration in these sections unless an extensive program of code enforcement and environmental improvements were begun there. Such emphasis in these areas would contribute to the overall lasting success of this alternative in taking advantage of the space impedence impacts of BART.



Alternative R-5

Alternative R-5: High Density and Redevelopment Around the Station: This approach, also, would try to realize the accessibility potential right near the station, but in a more active manner than Alternative R-4. It would radically change the arguably obsolete immediate environs of the station, and would encourage a surrounding tight cluster of high-rise and low-rise apartments and major office and retail construction. Hopefully, though, there would still be some continuation of the "Union Street" theme along College... Public actions would feature some form of redevelopment project at or adjacent to the station. There would also be selective upzoning near the station (balanced by downzonings farther away); improved design controls; various environmental improvements (including new park space); and possibly, in some sections, concentrated code enforcement or the equivalent.

This alternative would establish the area right around the BART station as the central focus for Rockridge. It would probably be quite successful in attracting major new office, retail, and apartment construction. Such intensification there would raise commercial rents in the vicinity. Also, depending on project design and possible circulation improvements, it poses the danger of seriously increased traffic congestion. To be least disruptive, redevelopment here would need to provide for compensating traffic improvements and circulation changes, to provide adequate open spaces and recreation facilities, and feature appropriate pedestrian-oriented design along College Avenue and the adjoining streets.

Retail and office uses with the ability to pay the highest rents will locate closest to the station. Many of the smaller retail stores would be able to continue along College although most of the more marginal operations would be forced out of those sites

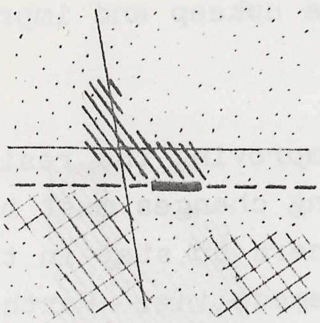
nearer the station and to the north of it. Rents will not be raised so noticeably along College Avenue south of the station. In general higher paying office uses should be encouraged to locate at the station redevelopment area or along the side streets adjacent to it.

Both the increased commercial activity and traffic near the station and the noise from the freeway would make these side street less desirable for residential uses.

Higher density residential would be encouraged to locate around the commercial development. Strict design controls and environmental improvements would be needed to protect the appearance of the residential areas. Careful consideration should be given to preserving the best single-family sections in neighborhoods "A", "B", "C", and portions of "D" by downzoning and by locating major new development so as not to disrupt these neighborhoods. A code enforcement program or the like would still be necessary in "F" and "G" to control pressures for deterioration there.

Overall this alternative offers a good, workable strategy for realizing the potential impacts of BART.

Fruitvale Station Area Alternatives



Alternative F-1

Alternative F-1: Minimum Growth and Maximum Preservation: This alternative would try to minimize the amount of new development and, at the same time, would try to preserve and enhance nearly all of Fruitvale's residential area, including those below the BART line in the Kennedy Tract, for low-density housing. This, presumably, would help to protect neighborhood stability, to conserve needed existing low-income housing, and to minimize the burden on local public facilities. Only a few sections (such as right near the station and along portions of Fruitvale Avenue and Sausal Creek) would provide for apartments. Hopefully there would be some intensifications of retailing in the old shopping district along East 14th near the station, and possibly of office or medical facilities in some nearby sections...Public actions would include downzoning most of the residential areas above East 14th, rezoning most of the housing "pockets" in the Kennedy Tract from industrial to residential zoning, and applying more restrictive controls to many of the remaining industrial areas. There would be various environmental improvements and concentrated code enforcement or the like, especially below East 14th Street, but no redevelopment project.

Efforts to "preserve and enhance" Fruitvale's residential areas would require quite extensive public involvement in programs that would provide funds for code enforcement, residential rehabilitation, and environmental improvements. This is especially true for those neighborhoods below the BART line. Mere changes in zoning there would not have any real effect on preserving or improving the quality of the residential neighborhoods and controlling further spread of the deterioration process. In fact, a change to residential zoning in those areas currently zoned for industry might even serve to hasten the dterioration process because present owners would be more able to sell their properties

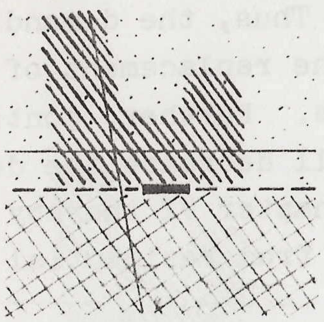
and leave the area, hoping to get whatever price they could for them. Because of the existing condition of many portions of that area, buyers would be those most interested in a housing bargain and those unable to pay for future upkeep and improvements.

Thus, to be effective in preserving <u>and</u> improving the residential neighborhoods below the BART tracks, zoning changes must be accompanied by active programs encouraging owners to stay in the area and providing funds for maintenance and remodeling. Furthermore, older abandoned and deteriorated buildings would need to be removed, streets and sidewalks repaired, park and playground space added, and careful planning and strict controls enforced to control the adverse impacts of the remaining industrial areas on the residential pockets.

Downzoning in neighborhoods "A", "B", "C", and "D" would preclude new development from these areas. However, because subareas "E" and "F" below the tracks will be improved, pressures for deterioration and neighborhood change coming from them up into the other neighborhoods will be lessened. In general owners in "A", "B", "C", and "D" are able to meet maintenance expenses and will continue to be able to do so. There are some individual structures in "A" particularly which could be improved but the overall outlook for neighborhood preservation is good. Some new apartment development would improve the area somewhat and should be included.

Such improvements of the residential areas would not serve to significantly intensify retailing along East 14th Street or to encourage new development there. For several reasons, as explained in Chapter VI, the retailing market has changed from what it was when the existing areas were built. Given the existing kinds of residential development, even with some general improvements, the old market would not be revived enough to cause any significant new development or rehabilitation. Perhaps there may be a few additions of small convenience type shops or stores that would locate in the existing buildings.

Alternative F-2: High Density in Selected Areas (Without Redevelopment): This concept would try to use the station's accessibility potential to revitalize Fruitvale by providing for a substantial amount of new construction in appropriate locations. New high and medium-density apartments would be allowed in those sections with the best accessibility or amenities -- for example, right next to the station and along Fruitvale Avenue and Sausal Creek. Conversely, new housing would be kept out of the environmentally-deficient portions of the Kennedy Tract below the BART line, and industrial and heavy commercial uses would be expected to gradually replace the existing housing there. Hopefully there would be intensification of retailing in the old shopping district near the station, and some office or medical construction there are on East 14th and Fruitvale...Public actions would include selective rezonings designed to channel new development into the best locations. (Below the BART line the zoning would remain industrial although this could be "light industrial" where there are still pockets of housing.) There would be various environmental improvements, including additional park space, which would hopefully stimulate new private construction. There would also be at least some concentrated code enforcement or comparable actions, but no redevelopment project.



Alternative F-2

This alternative depends essentially upon zoning and capital improvements to spur new development and preserve the areas above the BART line. As explained in Chapter VII, some medium to high-density residential construction is feasible in neighborhoods "A", "B", "C", and "D", with a zoning change from industrial to residential in "D" and without zoning changes in the other three subareas. This construction would serve to improve the general area, especially if environmental improvements and some code enforcement were undertaken to encourage new development.

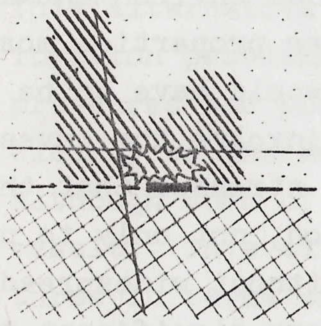
However, deterioration would continue in the neighborhoods below the station, tending to cause future dislocation of the present residents there, and having adverse impacts on the existing industries and the other Fruitvale neighborhoods above the BART line, especially those portions adjacent to it. Our analysis in earlier chapters concludes that demand for new industrail space will be mainly limited to space needed to remodel, rebuild, and expand existing facilities. Thus, the demand will not be sufficiently strong to result in the replacement of large numbers of existing dwelling by industries. Further, continuing deterioration of the residential areas will decrease the demand or industrial space as was explained in Chapter VI thereby slowing the process of conversion of land from residential to industrial uses.

Therefore, under this alternative, these forces for change from below the station would tend to nullify forces for improvement above the station so that the overall improvement of the Fruitvale area would not be great over the long run. Large investments of funds for environmental improvements and code enforcement would help but would not be enough to completely reverse the trends. Although the effects would be different, the overall results under F-2 would be no better than those under F-1.

The commercial strip along East 14th Street would not be significantly revitalized because the neighborhoods themselves would not be changed significantly and because the existing development there would no longer serve the market that it was designed to serve. The private market would not be able to redevelop that area to the extent needed to change its image and to make it attractive to both BART patrons and neighborhood residents. The kind of shopping cluster needed to serve the existing markets should really be limited to only a small section of the existing strip and attention would have to be focused on new uses for some of the existing space along the street. The private market could not provide the scale of redesign and redevelopment needed

to create a "new" area and redesign existing areas so as to enhance and support it.

As our analysis in Chapter VII concluded, new office construction is generally not feasible in the area and the actions included in this alternative will not change this result.



Alternative F-3

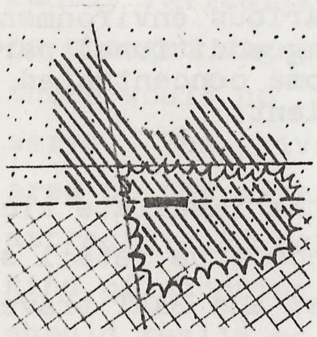
Alternative F-3: High Density in Selected Areas (With Some Redevelopment Near the Station): Like Alternative F-2 this approach would encourage new station-related development, but it would make a more active effort to stimulate this. High and medium-density apartments would be allowed in those sections with the best accessibility or amenities -- for example, right next to the station and along Fruitvale Avenue and Sausal Creek. (New housing would be excluded from the portions of the Kennedy Tract below the BART line, and existing housing there would, presumably, be replaced gradually by industry and heavy commercial.) The alternative would call for intensification of retailing in the old shopping district near the station, and new office or medical construction there and on East 14th and Fruitvale...Public actions would emphasize a moderate-sized redevelopment project right at or next to the station. In Fruitvale generally, there would be selective rezonings designed to channel new development into the best locations. There would also be various environmental improvements, including additional park space, and at least some concentrated code enforcement or equivalent.

A moderate-sized redevelopment project in the immediate vicinity of the station that would include convenience type retail stores and would serve both the neighborhood market and BART travelers and would enhance retail sales and improve the image of the shopping district. It would serve to encourage new residential development near to the station and along Fruitvale Avenue and Sausal Creek. However, like the other alternatives already considered it will not affect the potential for future offices uses.

We have identified strong pressures for deterioration coming from the areas below the station and from the existing commercial strip along East 14th which must be dealt with if the redevelopment project is to improve the total area. Just as under Alternative F-2, these pressures would tend to negate various improvements over the long run.

The effectiveness of a moderate-sized redevelopment project could be increased if it were supplemented by a major, widespread investment of public energies and funds to rezone and reinforce deteriorating areas with code enforcement and environmental improvements, including the removal of those properties most badly deteriorated. But such involvement would have to be substantial and long term, and would have to involve the investment of significant public funds. It should be stressed that the need is to reverse existing trends for deterioration, not only to protect against them. Though this might be done without widespread clearance and redevelopment, it would require very significant public involvement.

As was explained under Alternative F-2, continued careful attention must be given to the compatibility of industrial and residential uses because the demand for industrial expansion would still not be great enough to replace the housing below the BART line.



Alternative F-4

Alternative F-4: Major Redesign and Redevelopment Below East 14th Street: This alternative would radically reshape a large area below East 14th Street so as to create a large "enclave" with its own self-contained environment focussing on the station. New medium and high-density housing would concentrate largely in this enclave, though some construction would be expected above East 14th as well. New retail and office facilities would also concentrate in or right next to the enclave, although some would be expected to spill onto nearby streets. The presumed relocation of many Kennedy Tract residents to new housing in the enclave would

> facilitate industrial replacement of the old housing elsewhere.,. Public actions would empahsize very large-scale redevelopment. Also involved would be rezoning of the "enclave" from industrial to residential and commercial, tighter zoning controls in nearby industrial areas, and substantial downzoning of areas above East 14th Street. There would be various environmental improvements, including new park and school facilities in the "enclave", and concentrated code enforcement or the equivalent.

This alternative is designed to solve the environmental and deterioration problems below the station rather than trying to delay pressures and possibly reverse them. This type of approach would clearly be the most successful in revitalizing the entire area, although some of the neighborhoods would dramatically change as a result. This alternative would do more than any of the other three in terms of attempting to create a whole new social area and increasing and changing the demand for space as a result. Further, it would probably do more to encourage BART patronage than any of the other. However, to be successful this alternative would be quite costly and would require a large public investment of funds.

This alternative would facilitate the improvement of housing quality for both low and middle income residents. It would also help provide for expansion and improvement of existing industrial areas and could better promote separation of housing and industry reorganization of the confusing circulation system near East 12th Street and San Leandro Street, and general upgrading of the physical environment. As a result new retail development would be encouraged to serve these areas. The "enclave" area should be designed so as to serve both neighborhood residents and BART patrons and should include areas for outdoor recreation, eating, and relaxing as part of a general plan to create a real focus at the station, thereby strenghtening the cohesiveness of the entire neighborhood on both sides of it. Code enforcement would be needed

in these sections of the area where older buildings would remain including sections above the BART line, as a further preventative measure that would reinforce public commitment and interest in the area.

Such a comprehensive approach should be carefully coordinated with the goals of the existing community and the Church and should include their involvement. If the goals of the alternative are carefully coordinated with those of the existing residents, the type of program which would result would have a more lasting effect on the entire area.